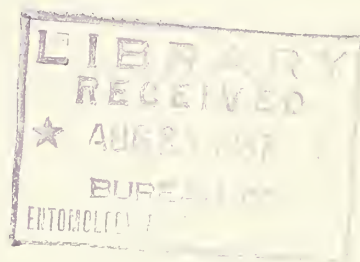


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THE INSECT PEST SURVEY  
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## THE MORE IMPORTANT RECORDS FOR JULY

Grasshoppers continued to be the most serious problem of the year. Rather heavy migrations were under way over much of the infested area. In the southern part of this area--Nebraska and Colorado--the outbreak was probably as heavy and widespread as the outbreaks in the late 70's.

A slight outbreak of Mormon crickets occasioned considerable alarm in the Dakotas during the month. In the western part of the range of this insect egg laying began the second week of July.

The Japanese beetle was appearing in unprecedented numbers. Around the periphery of the infested area reports of heavy emergence have been received from the metropolitan area surrounding New York City, and from Connecticut, Rhode Island, Delaware, and northeastern Maryland.

The recently introduced weevil Naupactus leucoloma Boh. reached its peak of emergence the second week of July. In some fields in Florida it was emerging at the rate of about 500,000 beetles per acre. The insect was discovered at Laurel, Miss., on August 9.

Another weevil but recently reported from this country, Calomycterus setarius Roelofs, again appeared in numbers in parts of Connecticut.

A heavy outbreak of the variegated cutworm occurred in Wisconsin, Minnesota, Nebraska, and South Dakota. In many places the outbreaks were unprecedented.

Unusual numbers of the sugar beet webworm were reported from North Dakota and the Great Basin States.

The white-lined sphinx appeared in startling numbers over a very wide area extending from Michigan westward to the Dakotas and Idaho.

Serious armyworm outbreaks occurred over much of the United States, reports having been received from the New England, Middle Atlantic, East Central, West Central, and Great Basin States.

The European corn borer was much more destructive than last year in the New England States and New York.

Codling moth abundance was variable, New Jersey reporting the heaviest infestation since 1933 and Delaware the lowest since 1929. In general, infestations appear to be about normal.

The flatheaded apple tree borer is still destructive over much of the area that has suffered severe drought during the last few years.

Blister beetle injury was reported generally from New England to Kansas and the Gulf.

Serious damage to tomato fruit from the corn ear worm was reported from the Middle Atlantic and East Central States. The usual damage to sweet corn is being generally reported. The infestation in southern California is apparently increasing.

Unusual injury to potatoes by leafhopper was reported from the Middle Atlantic States and from some parts of Indiana and North Dakota.

From New York westward to South Dakota the imported cabbage worm was generally destructive.

False chinch bug attacking sugar beets is reported from Idaho south to Arizona and east to Oklahoma and Texas.

The boll weevil is causing more damage in South Carolina than it has in a number of years. Infestation is also quite heavy in northern Georgia. In the Gulf region, although populations are not unusually high, weather favorable for weevil development has increased the hazard. Heavy infestations are also reported from eastern and southeastern Texas.

Cotton flea hopper damage was reported from northern Georgia westward to southern Texas.

A half-grown cotton leaf worm was found on July 22 in southern Georgia and one on July 13 in southern Alabama. Up to August 2, however, no leaf worm had been reported from Louisiana or Mississippi.

Gypsy moth infestation in New England is heavier than it has been for many years and very serious defoliation is generally reported.

Severe defoliation by the forest tent caterpillar is also reported from New England and Minnesota.

Cankerworms are generally reported from New England, and the most serious outbreak of the spring cankerworm ever to be reported is under way in Nebraska.

The bagworm is generally prevalent from New England and the East Central States southward to the Gulf.

A heavy infestation of the spruce budworm on ponderosa pine is reported from Colorado.

## THE MORE IMPORTANT ENTOMOLOGICAL FEATURES IN CANADA

In areas in Saskatchewan where crop conditions have been poor, and control measures consequently generally neglected, grasshopper ravages were completing the work of the drought. Local dispersal of the insects resulted in severe defoliation of remaining crops throughout west-central and northwestern parts of the Province, with heavy reduction in feed supply for livestock. Infestations are spreading north and north-eastward into many new districts. In Alberta there was little loss from grasshoppers up to the end of June and the use of poisoned bait was proceeding with satisfactory results. However, with the advent of hot weather in July, the grasshoppers were migrating into grain fields, and some districts reported losses in spite of the strenuous poisoning campaign. Toward the middle of July hoppers were migrating into southern Alberta and losses were increasing in drier sections, particularly in the southeast. Severe damage was still occurring in southern sections, in the latter part of the month, in spite of recent rains. In Manitoba the distribution of poisoned bait was necessary only in the extreme southwest, and excellent kills were obtained. Late in July, grasshoppers in the Red River Valley were reported dying of fungous disease. By mid-July, a large proportion of the grasshoppers over extensive areas of the Prairie Provinces had reached the adult stage.

In areas of Saskatchewan and Alberta affected by extreme drought, the destruction of host plants may result in a marked reduction of the wheat stem sawfly population, and reduce the economic importance of the insect in such areas for some time to come. In the Rockyford, Nobleford, and Barons districts of Alberta, wheat is severely infested.

The armyworm is causing considerable loss of excellent stands of oats, other grains, and grasses in a wide area in eastern Saskatchewan and has defoliated some fields of oats and barley at scattered points in Manitoba.

Severe outbreaks of the western chinch bug occurred in old brome-grass pastures in the Red River Valley, Manitoba and, where the insects attacked wheat in numbers, completely destroyed the crop.

Weather conditions in southwestern Ontario were ideal for pupation and emergence of the European corn borer. The first moths and eggs were found at Chatham on June 28.



Extensive outbreaks of blister beetles of several species again occurred in the Prairie Provinces. The abundance of these insects is reported to be associated with repeated outbreaks of grasshoppers, on the egg pods of which the larvae feed.

The Colorado potato beetle appears to be more abundant and injurious than usual in Ontario and parts of Quebec. A marked reduction over previous years is noted in Manitoba.

Heavy infestations of flea beetles of several species were reported on field and garden crops in various parts of Eastern Canada and in Manitoba.

Important damage by the cabbage maggot was reported in Ontario and on Prince Edward Island. In the latter Province and in eastern Ontario the onion maggot is also causing notable injury.

Extensive flights of the diamondback moth occurred in southern Alberta and Saskatchewan in spring, and the larvae have caused rather severe damage to cruciferous crops.

The first brood of codling moth was heavy in southern Ontario, as a result of the large carry-over from 1936. There were no serious worm infestations, however, in well-sprayed orchards.

The infestation of oriental fruit moth continues very low in peach orchards of southern Ontario.

The apple aphid and the black cherry aphid are troublesome in orchards of the Okanagan Valley, British Columbia.

An infestation of the spruce budworm is present over a large territory in Manitoba and Ontario. It apparently extends from the Sandilands Forest Reserve, Manitoba, to the Eagle River, Ontario, and appears to be spreading eastward.

The spruce mite, which has long been a serious pest of planted spruce in the Prairie Provinces, has this year assumed outbreak proportions, and reports indicate that defoliation is proceeding rapidly.

An extensive and injurious infestation of the yellow-headed spruce sawfly has developed in northern and central Manitoba, Saskatchewan, and Alberta.



The European pine shoot moth, which was largely eliminated in the Niagara district, Ontario, by the severe winter of 1933-34, has recovered and increased to a somewhat alarming extent.

Severe defoliation by the satin moth is reported on Prince Edward Island and Cape Breton Island. Defoliation also occurred at Moncton and in Westmoreland County, New Brunswick. A new infestation was discovered at McAdam, New Brunswick. Little damage was done this year at Amherst, Nova Scotia, where the outbreak has been much reduced.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Vermont. H. L. Bailey (July 26): The lesser migratory grasshopper (Melanoplus atlanis Riley) is abundant in West River Valley, Windham County, southeastern Vermont.
- Georgia. O. I. Snapp (July 1): Grasshoppers originating in wheat stubble have moved to adjoining cotton and corn and have caused considerable damage to those crops at Marshallville, in central Georgia. (July 13): Grasshoppers are unusually abundant and have caused considerable damage to old corn at Fort Valley.
- C. H. Alden (July 19): Severe damage to corn by grasshoppers. Most abundant species were M. differentialis Thos. and Dissostertia carolina L. Grasshoppers are generally more abundant and injurious in the southern half of the State than they have been in many years.
- Florida. J. R. Watson (July 23): Grasshoppers, particularly the so-called "bird grasshopper" (Schistocerca americana Drury), did much damage in the northern part of Alachua County, where corn was badly riddled over a considerable section.
- Ohio. T. H. Parks (July 22): But one report has reached this office concerning grasshopper damage. This came from Brown County, southern Ohio, where the insects were reported injuring tobacco and soybeans on a farm. During the wheat-insect survey grasshoppers were found to be present in only moderate numbers.
- Indiana. J. J. Davis (July 26): Grasshoppers are abundant in more or less isolated spots throughout the northern half of the State, with greatest prevalence in the western part, especially near the Illinois State line. Although most of the trouble is in the field crops, a number of reports of injury in gardens were received the first half of the month.
- Illinois. W. P. Flint (July 21): Grasshopper damage continues to be moderate over much of the infested area in the State. There is considerable migration to corn and soybeans, now that the small grain is being cut. Hoppers in all cases are showing distinct preference for soybeans over corn.
- Minnesota. A. G. Ruggles (July 19): Grasshoppers being reported from all southern and western counties of the State. Not alarming, but unless controlled will build up.
- Missouri. L. Haseman (July 24): The infestation in Missouri continues to be serious. Some second-brood emergence, apparently of Melanoplus mexicanus Sauss.

North Dakota. F. G. Butcher (July 19): Grasshoppers continue to be the most important insects in all counties, except in the northeast corner of the State, with M. mexicanus the predominant form. Most of the important species are in the adult stage. Localized migrations have been commonly reported during the last 2 weeks over most of the infested area but the hoppers have not spread out extensively into noninfested areas. Control operations are slowing down considerably in some areas, since farmers are becoming discouraged because of the continued invasion by adult flights. M. bivittatus Say, M. packardii Scudd., M. mexicanus, and M. femur-rubrum Deg. have been observed mating and M. bivittatus has started laying eggs.

South Dakota. H. C. Severin (July 2): Many grasshoppers are now fully winged. Considerable migration is taking place. Hordes of grasshoppers are moving into South Dakota from the south and many are leaving the State for regions elsewhere. Owing to harvest, the poisoning campaign has lagged. (July 3): M. mexicanus is the species most harmful in South Dakota. Of considerable less importance are M. differentialis and M. bivittatus. A very serious infestation covers much of eastern South Dakota, east of the Missouri River. Much less serious west of the Missouri, but become more abundant near the Black Hills. Considerable damage has already been done to small grain, corn, and garden crops.

Nebraska. O. S. Bare (May 20 to July 20): Grasshoppers proved to be the outstandingly major pest in the State during the period here covered. The grasshopper infestation is unquestionably the heaviest and most widespread since the pioneer "grasshopper years" of 1874-76. Every county in the State has experienced serious crop damage, with the possible exception of five or six counties in the sandhill area, and more or less scattered but somewhat destructive infestations have occurred there. M. bivittatus and M. mexicanus had hatched in large numbers by May 20, and hatching of those species continued into the early part of June. M. differentialis had barely started to hatch on May 20, but developed rapidly and continued well through June. The first noticeable crop damage was reported about May 20, and became increasingly heavy throughout the 2-month period. Spring seedings of alfalfa and clovers were badly damaged or destroyed, and spring-planted grains and older alfalfa and clover fields in many sections were badly stripped. Serious damage to corn began early in June and has continued to the close of the period covered by this report.

M. H. Swenk (July 20): Parasites of grasshoppers have begun to appear in force. The amount of parasitization by the sarcophagid fly Sarcophaga kellyi Ald. had by July 20 become quite large. Dead M. bivittatus, M. differentialis, M. femur-rubrum, and M. mexicanus, collected from two farms near Lincoln from June 25 to July 1, began giving up maggots of this species within 24 hours. Of the 691 grasshoppers collected on one farm, a total of 125 sarcophagid maggots



emerged and 103 pupated and successfully reached the adult-fly stage, giving a total successful parasitization of 18 percent. Even heavier parasitization has been reported from western Nebraska, especially in Garden County, where the toll of Sarcophaga kellyi on the grasshopper population has become obvious on some farms. Parasitization of grasshoppers by S. kellyi was first reported from Hall County on June 22. A great abundance of the mite Eutrombidium trigonum has also developed on Nebraska grasshoppers. The first reports of the presence of these mites in abundance came from Jefferson, Boone, and Dodge Counties on June 25, 26, and 30, respectively, and reports have since become general over the State. Since the end of June, and especially during July, there have been reports of heavy infestation of grasshoppers, especially of M. bivittatus and M. differentialis with hairworms (Gordiaceae). These have come from Richardson County north to Douglas and Madison Counties and west to Furnas County.

Kansas. H. R. Bryson (July 22): Although grasshoppers are abundant in most sections of the State, the situation is not alarming and not as bad as last year. In some localities parasitization is playing an important role in the natural control. The most common parasites are the dipterous ones and the horsehair snake (Mermis sp.). In northeastern Kansas 50 percent parasitization has been observed in some localities, but the number of reports received by correspondence have been comparatively few. This is no doubt due to the effective organized control campaigns that have been instituted in the counties. Such campaigns are usually accompanied by the distribution of information that would ordinarily be sent out in correspondence. Most of the species involved at present are Melanoplus bivittatus, M. mexicanus, M. differentialis, and M. femur-rubrum. The lubber grasshopper Brachystola magna Gir. is more abundant on the highlands north and around Manhattan than it has been for several years.

Tennessee. G. M. Bentley (July 21): The outbreak of M. femur-rubrum and M. differentialis in several counties has been satisfactorily controlled. The nurserymen of Franklin County have reported that the peach leaves on young growing stock were badly eaten by grasshoppers before they knew of their presence.

L. B. Scott (July 16): Grasshoppers are still present in large numbers, with the most noticeable damage in tobacco. Where no baits have been applied the damage amounts to as much as 80 percent.

Arkansas. D. Isely (July 24): It has been estimated that 335,000 acres of crop land had potentially injurious infestation of grasshoppers during the latter part of June and the early part of July. The greater part of this infestation was M. differentialis. In some spots, however, M. mexicanus was the dominant species, and its appearance was earlier in June. The most seriously injured area was in the Delta between the St. Francis and Mississippi Rivers, in northeastern Arkansas, with some heavy infestation in the counties immediately west of this. The

outbreak has been brought under control fairly well. In the north-western part of the State, where injury was most severe in 1936, grasshoppers have been less numerous than average, except in a few spots. Where injury has occurred, the destructive species have been M. differentialis and M. femur-rubrum. M. bivittatus, ordinarily regarded as an unusual species in northwestern Arkansas, has been abundant in a few spots.

Oklahoma. F. A. Fenton (July 20): Grasshoppers continued to be the most injurious insect pest in Oklahoma during the past month. The most common species, M. differentialis, has now largely reached the adult stage and is prevalent in alfalfa and cotton fields. Most of the crops, with the possible exception of alfalfa, are beyond the point where they can be injured by these insects.

C. F. Stiles (July 22): Grasshoppers continue to be very numerous in Oklahoma, except in the extreme southeastern counties, and in some localities there are outbreaks. Corn, cotton, and alfalfa are suffering most at this time. Many cornfields are being completely defoliated and the third cutting of alfalfa is being seriously damaged, where the hoppers have not been poisoned. The species doing the most damage are M. bivittatus, M. differentialis, and M. mexicanus. The species most prevalent in the western Panhandle counties is Dissosteira longipennis Thos.

Alabama. J. M. Robinson (July 21): In Jackson County grasshoppers were reported on July 17 as being a very serious threat to field crops. The bird grasshopper (Schistocerca americana Drury) is causing serious concern at Deatsville attacking over 2 acres of cotton and about 1 acre of oat stubble. Adults were emerging on July 19.

Mississippi. C. Lyle (July 23): Schistocerca americana Drury was damaging corn and cotton at State College about the middle of July. It was necessary to use poisoned bait to control them. Infestations of grasshoppers have been found in Warren, Washington, and Quitman Counties, attacking cotton and other crops.

Texas. F. L. Thomas (July 23): Grasshoppers were damaging wheat on June 26 and 27 in Hemphill and Ochiltree Counties. Fifty percent of the wheat heads were on the ground at Canadian in Hemphill County and also in Dallam and Sherman Counties, of the north Panhandle area.

Idaho. C. Wakeland (July 21): Small local outbreaks of grasshoppers are being baited in Bear Lake, Bannock, and Caribou Counties, southeastern Idaho; in Fremont County, northeastern Idaho; in Lincoln and Gooding Counties, south-central Idaho; and in Payette County, southwestern Idaho. The population is increasing and we expect outbreak conditions in larger areas in 1938.

Utah. G. F. Knowlton (July 29): Grasshopper conditions are becoming increasingly serious as late-hatched nymphs increase in size.

Large populations are encountered in many localities in northern Utah. Alfalfa is being seriously damaged at Liberty, Eden, and Smithfield by grasshoppers, 98 percent of which are nymphs. More of the grasshoppers are winged in central and southern Utah. Pastures are being damaged at Dry Lake, Sardine Canyon, and Benson. (July 19): Grasshopper damage is very severe to alfalfa in the Newton-Clarkston area. Damage is very severe in many parts of Millard County.

Arizona. O. L. Barnes (June 28): First-instar nymphs of the second generation of M. mexicanus were appearing generally in alfalfa fields in the Blaisdell district, 12 miles east of Yuma, on June 18. Populations ranged from 1 to 5 per square yard. A few nymphs were in the second instar. First-generation females were first noted on April 22 and were numerous by May 5. In 1936 first-instar nymphs of the second generation were first taken June 17.

MORMON CRICKET (Anabrus simplex Hald.)

North Dakota. F. G. Butcher (July 19): First actual reports of damage by Mormon crickets in North Dakota were obtained this month. These insects are alarmingly numerous, especially in southern Burleigh County, Emmons County, and in McKenzie County. Some crop injury has been reported in these areas.

South Dakota. H. C. Severin (July 3): A. simplex has increased enormously in abundance in South Dakota this year. This is the first time in history when complaints have reached us that Mormon crickets are doing considerable damage in the State. The Mormon crickets are found in large numbers, chiefly west of the Missouri River, but they are numerous in the Ree Heights Hills, as far east of the Missouri River as Hand County. (July 21): The Mormon cricket situation is becoming more serious, especially in Butte and Lyman Counties.

Montana. H. B. Miller (July 22): Mormon crickets were laying eggs in Powder River County on July 10.

Utah. C. J. Sorenson (July 21): Mormon crickets are very abundant in Juab and Tooele Counties. They are only moderately abundant in Millard County, because of control work.

SUGAR BEET WIREWORM (Limonijs californicus Mann.)

California. R. E. Campbell (July 24): A letter just received says: "Wireworm damage in Ventura County this year has been more widespread and severe than any of the oldest inhabitants can recollect." Other reports indicate that at least three-fourths of the bean fields show wireworm damage in varying degrees.



JAPANESE BEETLE (Popillia japonica Newm.)

Connecticut. W. E. Britton (July 23): More prevalent than ever before in the southern half of Fairfield and New Haven Counties, and in the Hartford and New London areas. The heaviest infestations seem to be in Bridgeport, Hartford, New Haven, and Ridgefield. The earliest emergence recorded was on June 22. Two lots of adults from New Haven have been received for identification.

Rhode Island. A. E. Stene (July 23): The Japanese beetle is showing increase in present infested localities but so far as known no new localities have been discovered in which infestations are sufficiently heavy for people generally to discover them.

New York. E. P. Felt (July 23): P. japonica is more abundant than heretofore in southeastern New York. In some localities infestations approach outbreak proportions.

New Jersey. T. N. Dobbins (June): In the vicinity of Moorestown the first adult beetle above ground was found on June 14, whereas in 1936 the corresponding date was June 7. Adults increased slowly, probably as a result of the comparatively cool, cloudy weather, but by the end of the month they were becoming abundant locally, especially in southwestern New Jersey, where feeding damage became evident by the close of the month. The normal, evenly distributed rainfall of May and June provided ample soil moisture so that in most sections the soil is in excellent condition for rapid emergence and oviposition with the advent of normal July weather.

Delaware. L. A. Stearns (July 23): Severe injury throughout the northern portion of New Castle County. Apparently about the peak in the cycle of infestation by this insect.

Maryland. E. N. Cory (July 26): Many reports and requests for information being received from many parts of the State.

ASIATIC GARDEN BEETLE (Autoserica castanea Arrow)

Connecticut. W. E. Britton (July 23): This insect prevalent in certain localities and caused damage. Seventy-five adults were received from a garden in Stamford. It is attacking various flowering and vegetable plants.

WHITE-FRINGED WEEVIL (Naupactus leucoloma Boh.)

Florida. J. R. Watson (July 23): N. leucoloma apparently reached the peak of its emergence in Walton and Okaloosa Counties between July 10 and 15. It was estimated that there were close to 500,000 beetles per acre in some of these fields. The beetles are actively laying eggs. One of the most striking observations was that they are breeding parthenogenetically. A. N. Tissot was the first to observe that no males were to be found.

Florida and Alabama. H. C. Young (July 1): Known infested area, 35 square miles--20 square miles in Walton and 13 in Okaloosa Counties, Fla., and 2 in Covington County, Ala. One-third of area is in cultivated crops and remainder in cutover and woodland range. Host plants of the larvae are corn, cotton, velvetbeans, sugarcane, peanuts, sweet-potatoes, parsley, cocklebur, carpetgrass, paspalum, cabbage, collard, amaranthus, and apple trees. Adults attack cotton, corn, and peanuts.

Alabama. J. M. Robinson (July 14): Adults are emerging near Lockhart.

Mississippi. C. Lyle (August 10): Light infestation discovered at Laurel.

A WEEVIL (Calomycterus setarius Roelofs)

Connecticut. M. P. Zappe (July 22): Adults plentiful in Stratford, about as many as last year. In old infestations at Sharon not so many adults as last year, but adults plentiful at two new localities in the southern part of town. Plants attacked are clover, sweet clover, Ampelopsis, and Helenium. Some injury to garden peas in one place.

GREEN JUNE BEETLE (Cotinis nitida L.)

Virginia. A. M. Woodside (July 21): Green June beetles became very numerous in codling moth bait pails at Staunton on July 6 and have continued so, although their numbers are now decreasing.

C. R. Willey (July 10): These beetles were swarming about and feeding on Chinese elms 4 miles east of Amelia and 5 miles southwest of Amelia they were as bad on several medium-sized black oaks, feeding on the tender new growth  $\frac{1}{4}$  mile away. On the same farm they were swarming about several apple trees and several Wild Goose plums.

GRAPE COLASPIS (Colaspis brunnea F.)

Virginia. C. R. Willey (July 13 to 17): This beetle quite numerous on crapemyrtle and Deutzia in nurseries around Norfolk. Doing considerable damage to some by chewing tender tips of new growth.

Georgia. T. L. Bissell (July 29): Adults feeding on the inside of bracts surrounding cotton squares and bolls. Little damage apparent.

Arkansas. D. Isely (July 24): Has caused some local injury by feeding on the bracts of the cotton squares and on foliage in the northeastern part of the State.

Alabama. J. M. Robinson (July 14): Actively feeding on cotton and soybeans in Madison and Limestone Counties, adjoining Tennessee. Some years ago this beetle was observed in the Tennessee Valley, affecting the stands of cotton, corn, and soybeans, the larva

having fed on the roots of these plants. We also found that the larva feeds on the roots of lespedeza, which is grown in a large way as a hay crop in the Tennessee Valley. Apparently these insects are spreading into the cotton at this time.

#### CUTWORMS (Noctuidae)

Illinois and Wisconsin. N. F. Howard (July 1): Full-grown larvae of Prodenia ornithogalli Guen. were found in pea fields in Illinois and Wisconsin, but were not numerous enough to cause noticeable damage.

Nebraska. D. B. Whelan (July 22): Moths of the cotton cutworm (P. ornithogalli) have recently been very numerous at lights at Lincoln, reaching their peak about July 15-20, and indicating a possible outbreak later in the season.

Mississippi. C. Lyle (July 23): D. W. Grimes collected specimens of the yellow-striped armyworm (P. ornithogalli) at Durant on July 13. It was attacking cotton at Puckett on July 8.

Wisconsin. C. L. Fluke (July 20): Lycophotia margaritosa saucia Hbn. is in very destructive numbers in southern Wisconsin, particularly in Iowa, Grant, Lafayette, Green, Rock, Dane, Dodge, Columbia, Fond du Lac, and Manitowoc Counties. They emerged first in the hayfields and as soon as the hay was cut moved into adjoining grain, corn, or potatoes. Have also caused trouble in the barns around the milking machinery, many dying there and emitting considerable odor.

Minnesota. A. G. Ruggles (July 19): L. margaritosa saucia is very abundant. Reports coming from all over the State.

Nebraska. M. H. Swenk (July 22): A very severe outbreak of the variegated cutworm occurred from June 8 to July 10. It did considerable damage to alfalfa, corn, potatoes, many garden crops, flowers, meadows, shrubs, and trees. These complaints were received from many parts of the State.

South Dakota. H. C. Severin (July 3): Cutworms of several species, including the pale western cutworm (Porosagrotis orthogonia Morr.), have done an immense amount of damage in South Dakota this year. In fact, this has been the most destructive cutworm year we ever had in this State.

#### SUGAR BEET WEBWORM (Loxostege sticticalis L.)

North Dakota. F. G. Butcher (July 19): Sugar beet webworms have caused considerable alarm in various places, being particularly numerous in a weedy flax field in Grand Forks County and in potato, wheat, and barley fields in Foster County.



Idaho. C. Wakeland (July 21): Local outbreaks of the beet webworm in Latah and Benewah Counties, in northern Idaho. Lambsquarters has been almost completely defoliated and larvae have attacked peas, doing very heavy damage in small areas. The attack is much worse along the margins of the fields, but some injury occurs throughout the fields, owing to the presence of lambsquarters, on which the spring brood evidently oviposited. The second generation of moths began appearing July 13.

Colorado and Utah. O. A. Hills (July 6): Outbreaks this year are unusually numerous, particularly in the Grand Valley of Colorado, where this insect rarely becomes of economic importance. It has been necessary this year to spray about 15 percent of the sugar beets in western Colorado and eastern Utah.

GARDEN WEBWORM (Loxostege similalis Guen.)

Missouri. L. Haseman (July 24): During the first half of the month the garden webworm did much damage to corn, alfalfa, and garden crops in central Missouri.

Nebraska. D. B. Whelan (July 22): There have also been large flights of the moths of the garden webworm at the light trap. Trouble with this pest later in the season was indicated again on July 16-18.

Texas. F. L. Thomas (July 23): L. similalis is causing more injury than usual in central Texas in cotton and alfalfa in the Bell, Hunt, and Limestone Counties from the middle to the last of June.

WHITE-LINED SPHINX (Sphinx lineata F.)

Michigan. R. Hutson (July 22): The white-lined sphinx moth is common about Saint Johns and Lansing.

Wisconsin. C. L. Fluke (July 20): Extremely numerous in hay, potato, and alfalfa fields. Feeding mostly on purslane but unconfirmed reports on potatoes and sudan grass. Reported from nearly every county in south-central Wisconsin, running northeast from Lafayette County to Brown.

Minnesota. A. G. Ruggles (July 19): Larvae sent in from two-thirds of the counties of the State. So numerous that farmers are alarmed, but little damage thus far. Feeding mostly on purslane, then fireweed, then leafy spurge. Has been found feeding on lettuce and carrots and did some damage in a field of potatoes.

South Dakota. H. C. Severin (July 23): The white-lined sphinx has appeared in enormous numbers over the entire State. Considerable damage is being done to garden and field crops, as well as to shade trees.

Tennessee. L. B. Scott (July 22): Being taken in traps in large numbers in Montgomery County. This species is at least twice as numerous as in a normal year. No reports of damage by larvae have been received.

Idaho. C. Wakeland (July 21): Larvae are very abundant in several localities of this State and are occasioning many inquiries. Reports have been received from Fremont and Teton Counties of eastern Idaho and from Latah, Nez Perce, and Benewah Counties in northern Idaho. Larvae are feeding almost exclusively on dock and what is locally called tar-weed, only attacking other crops after these weeds are defoliated, at which time the larvae are practically mature; therefore little damage to economic crops is caused.

#### EIGHT-SPOTTED FORESTER (Alypia octomaculata F.)

South Dakota. H. C. Severin (July 23): The eight-spotted forester has been more abundant than usual and has done considerable damage to grape, woodbine, and related plants.

Nebraska. M. H. Swenk (July 22): Numerous reports of the presence of larvae on wild or cultivated grapes and woodbine were received from June 12 to July 15 from Sheridan, Lincoln, Howard, Nuckolls, Wayne, Lancaster, and Douglas Counties.

### C E R E A L   A N D   F O R A G E - C R O P   I N S E C T S

#### WHEAT AND OTHER SMALL GRAINS

##### ARMYWORM (Cirphis unipuncta Haw.)

Connecticut. R. B. Friend (July 20): Six acres of oats in Newington and about 5 acres of grass in an orchard in Farmington destroyed. Caterpillars about fully grown. Also reported from Guilford, where between 5 and 6 acres of grass and clover in an orchard and 1 acre of sweet corn were infested. The sweet corn was severely damaged. This insect has also been reported as feeding on grass in an orchard in Hampton.

New York. N. Y. State Coll. Agr. News Letter (July 6): Armyworms showed up in Niagara County this week, eating all the clover cover crop in one orchard. (July 26): Armyworms have come to the front during the past week in Chautauqua County. They are pretty well scattered over the entire county, but are serious only in a few places on the Lake Erie plain. The armyworms are heavily parasitized by braconids.

R. W. Leiby (July 19): Two local outbreaks on sudan grass and alfalfa appeared from July 13 to 15 in Suffolk County.

Pennsylvania. H. P. Antoine (July 27): Infesting oats and corn; 50 acres 50 percent damaged in Newton Township, Lackawanna County. Attack is localized.

Virginia. D. W. Jones (July 27): In Onley a few local cornfields are practically ruined at this time by armyworms of the second generation. They are now about  $3/4$  inch long and have not yet begun to migrate.

E. J. Udine (June 10): Damage heavy. In an infestation at Timberville the barley stems were eaten off just below the heads, allowing the heads to drop to the ground. Damage was greatest in the low parts of the field.

Ohio. T. H. Parks (July 22): A flight of armyworm moths has been in progress for the last 4 weeks. They have been caught in large numbers in the codling moth bait pans, and at an electrocutor trap light. The numbers caught have decreased greatly during the last few days and the flight seems to be about over. Injury to ripening cherries by the moths was received from Lorain, Sandusky, and Franklin Counties. No complaints of outbreaks have been reported to us during July. The chief injury caused by the June outbreak was to young grass seeded in the wheatfields. This was destroyed in many fields of southwestern Ohio.

Illinois. W. P. Flint (July 21): The armyworm outbreak, which occurred during the last month has about run its course. There is still some trouble in the extreme northern counties, where the armyworm larvae are now about half grown. In this section of the State the worms are less numerous than they were in central and northern Illinois.

Michigan. R. Hutson (July 22): There is an outbreak of armyworms in the Saginaw Valley, in the east-central part of the State.

Wisconsin. C. L. Fluke (July 20): Outbreaks were just becoming apparent on July 17. Reports from Dane, Dodge, Columbia, Washington, and Fond du Lac Counties are more numerous than usual.

Minnesota. A. G. Ruggles (July 19): Armyworm reports beginning to come in from Clay County and some southern counties.

Iowa. C. J. Drake (July 14): The second generation of armyworms is doing some damage in oatfields. The infestation seems to be quite widespread in the northern half of the State.

North Dakota. J. A. Munro (July 20): Armyworms were present in most of the oatfields examined in the Harwood, Argusville, Durbin, and Kindred



vicinities. The infestations were spotted over Cass County. In one case where the field of oats was being cut--Durbin--the worms were moving out into an adjoining field of wheat. Reports, most of which were accompanied by specimens, indicate that the distribution of the worms is much more widespread than was the case in 1927. Reports have been received from points in Richland, Cass, Traill, and Sargent Counties. I noticed only a few tachinid flies in areas where the worms were prevalent.

Oklahoma. F. A. Fenton (July 20): The *Calosoma* beetle which was so prevalent following the armyworm outbreak has been identified by the National Museum as *Calosoma lugubre* Lec.

Montana. H. B. Mills (July 22): There is now a rather critical outbreak of the armyworm in Richland County.

Utah. G. F. Knowlton (July 5): Armyworms are damaging wheat in one field near Roosevelt.

#### HESSIAN FLY (*Phytophaga destructor* Say)

Ohio. J. S. Houser (July 1937): The hessian fly is less abundant in Ohio than it has been at any time since 1929. The average infestation of the 34 counties visited during the course of the annual wheatfield survey was found to be 4.4 percent. In 1936 the state-wide average was 12.4 percent. Clermont County, in the southwestern part of the State, was more heavily infested than any other. The average of the 10 fields examined was 15 percent. The lowest infestation in the State (2 percent) was found in Tuscarawas County. In 1936 Butler County ranked highest in the State, with an infestation of 50 percent, but this year the infestation there was only 5.7 percent.

Minnesota. A. G. Ruggles (July 19): Hessian fly is scarce. One report received from Winona County.

Missouri. L. Haseman (July 24): Stubble infestation in northeastern and southeastern Missouri is running as high as from 50 to 70 percent with, in some cases, as much as three-fourths of the flaxseeds showing parasitization in southeastern Missouri, according to recent observations by G. D. Jones.

#### WHEAT STEM MAGGOT (*Meromyza americana* Fitch)

Ohio. E. W. Mendenhall (July 2): The wheat straw maggots are quite bad in wheatfields in western Counties--Miami, Champaign, Auglaize, and others.

Kansas. H. R. Bryson (July 27): The wheat stem maggot is more abundant this year than it has been for several years, according to observations by R. H. Painter.

#### CORN

#### CORN EAR WORM (*Heliothis obsoleta* F.)

Minnesota. A. G. Sandahl (July 20): Corn ear worm is moderately abundant in

Lake Crystal, Blue Earth County.

Iowa. E. V. Walter (July 14): Eggs and larvae are present on 84 percent of the ears in one field of early corn in Van Buren County. Counts made in sweet corn from July 12 to 15 showed 12 percent of the ears infested at Charles City and 16 percent at Belmond, in northern Iowa; 40 percent infested at Polk City, in central Iowa; and 80 percent infested at Chariton, in southern Iowa. Larvae, probably first brood in northern Iowa, were nearly full grown. In southern Iowa mature larvae had left the ears, and eggs presumably of the second-generation constituted most of the infestation.

Missouri. L. Haseman (July 24): Corn ear worm has been very serious in the tassels of field corn and in early sweet corn ears. Worse for this season of the year than usual.

Nebraska. M. H. Swenk (July 22): Our only complaint of the corn ear worm so far this season was received on July 3 from Pawnee County, where it was working in popcorn.

Kansas. H. R. Bryson (July 23): This pest is still causing considerable injury to corn, particularly sweet corn.

STALK BORER (Papaipema nebris nitela Guen.)

Indiana. J. J. Davis (July 26): The common stalk borer was reported damaging corn at Noblesville and Elwood the first few days of July. At Elkhart it was reported damaging lilies on June 30. In all cases the specimens submitted were rather small, being hardly more than one-fourth grown.

Minnesota. A. G. Ruggles (July 19): The stalk borer is moderately abundant. A number of reports of injury to potatoes and corn.

Tennessee. G. M. Bentley (July 21): Reported as attacking cotton and corn grown in proximity of weed patches. The report has just come from Ripley, Lauderdale County, where there is a considerable infestation in weedy cotton.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Vermont. H. L. Bailey (July 26): Many adults about old cornfields in Essex, Chittenden County, northwestern Vermont, the last week in June and the first week in July. Scattering of moths noted in the county on July 21.

Massachusetts. A. I. Bourne (July 23): The European corn borer is at least normally abundant throughout the State. Here in the Connecticut Valley it is proving to be much more conspicuous generally than it was last year. We are beginning to note a considerable amount of damage from corn borer in fields of potatoes. This particular type of damage is most conspicuous in southern Hampden County, in fields just above the Connecticut State line. Early maturing sweet corn in many fields shows from 80 to 90 percent of the stalks infested and the ears are heavily infested.

Connecticut. N. Turner (July 21): Infesting sweet corn, the corn borer has been unusually destructive locally and is much earlier than in 1936. First-generation moths are present.

M. P. Zappe (July 22): Very abundant in southern New Haven County. Many larvae have reached pupal stage. Attacking corn.

Indiana. J. J. Davis (July 26): According to reports from Auburn, emergence of corn borer moths was the latest of any season on record in Indiana. The first male adults were taken on June 23, nearly 2 weeks later than in 1936. The first female was taken June 25 and the first eggs June 28. Cool nights delayed oviposition; otherwise weather conditions have been ideal for borer increase.

#### A CORNSTALK BORER (Diatraea sp.)

Texas. O. D. Deputy (July 1): Green corn offered for sale in the markets at Brownsville seems to run about 25 percent damaged. The stem end of the ear is most frequently attacked.

#### CHINCH BUG (Blissus leucopterus Say)

Ohio. T. H. Parks (July 22): Excessive rains through June and July have completely eliminated the chinch bug as a problem for this season.

Indiana. J. J. Davis (July 26): The cool, wet weather has apparently checked the development of chinch bugs. In Porter County, in the extreme north end of the State, reports of conspicuous abundance were received on July 10. From Morgan County, in central Indiana, where chinch bugs have not been conspicuous for many years, came the report on July 15 that sorgo was being badly attacked in spots. The bugs submitted were from second instar to nearly mature. It is believed that these are the immediate progeny of overwintering bugs. Reports from Greene County (between Vincennes and Terre Haute) on July 20 indicate some trouble from the first brood, these being sufficiently numerous to indicate probable trouble from the next brood of bugs. The outbreaks are scattered and slow in showing up, making control applications difficult.

Nebraska. M. H. Swenk (July 22): Chinch bugs did slight damage to corn in Nemaha County during the second week in July, but were not injurious elsewhere in the State. No migrations were reported from elsewhere than Nemaha County.

Oklahoma. F. A. Fenton (July 20): Damage has been reported from Vinita, Craig County; Bixby, Tulsa County; and Haskell, Muskogee County, in north-eastern Oklahoma.

C. F. Stiles (July 22): Chinch bugs are present in larger numbers in Choctaw County, southeastern Oklahoma, than they have ever been, according to reports from old settlers. Corn in some fields has been seriously damaged.



A CERCOPID (Lepyronia quadrangularis Say)

New York. R. W. Leiby (July 13): This angulate frog hopper migrated to a field of corn from a freshly cut meadow and completely destroyed a portion of the field. In another field, where corn was just up, a third of a 15-acre field was destroyed. The injury took place during a period of very hot weather in Fonda.

SOUTHERN CORN ROOT WORM (Diabrotica duodecimpunctata F.)

Ohio. T. H. Parks (July 22): A serious outbreak of the larvae was reported in sweet corn during July. Reports came from Hamilton and Hocking Counties, southern Ohio.

Indiana. J. J. Davis (July 26): The southern corn root worm has been received as damaging corn from the northern half of the State, the first reports coming from Frankfort and Remington, on July 8 and 12, respectively. At Crown Point, corn following this spring's planting of sugar beets was damaged on July 14. At Connersville 90 percent of commercial sweet corn acreage in one field was destroyed on July 19. Considerable damage also reported from Winamac, Pulaski County, on July 21.

Missouri. L. Haseman (July 24): Serious throughout central Missouri. Beetles emerging in great numbers.

CORN ROOT WORM (Diabrotica longicornis Say)

Kansas. H. R. Bryson (July 16): Reported causing injury to corn at Garnett.

CORN SILK BEETLES (Luperodes spp)

Mississippi. C. Lyle (July 23): The corn silk beetle was found attacking roses at Kilmichael on June 25, and cotton at Laurel, Ripley, and Decatur during the first week in July. It was also reported on cotton and corn at Lake on July 7 and on cotton at Aberdeen on July 20.

Louisiana. B. A. Osterberger and M. B. Christian (July): Found injuring corn in Franklin Parish. About 80 percent of the silks completely destroyed; very few grains of corn on ears. Also found injuring cotton.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

Indiana. E. V. Walter (July 20): The corn flea beetle is much more numerous at this time of the year than it has been for the last 2 years at Lafayette.

ALFALFA

ALFALFA WEEVIL (Hypera postica Gyll.)

Utah. J. C. Hamlin (June): Injury by the alfalfa weevil was light this season.

except in Millard County, Utah, and in Douglas County, Nevada, where 50 percent of the fields were severely damaged. Scouting revealed the weevil in five counties not heretofore known to be infested; namely, Weston, Campbell, Sheridan, and Johnson in Wyoming, and Custer in South Dakota.

California. A. E. Michelbacher (July 19): In the San Joaquin Valley there was a marked increase in the alfalfa weevil population. On July 4 the average number of larvae collected per 100 sweeps of an insect net ran as high as 785. This increase is probably the result of a partial second generation. In the Pleasanton and San Francisco Bay areas the larval population has remained small. On July 12 the average number of larvae collected to 100 sweeps in the most heavily infested field in the San Francisco Bay area was 114. In other fields larvae and adults have been difficult to find. Parasitization by Bathyplectes curculionis Thos. has dropped very rapidly. On July 4 it was less than 1 percent in the San Joaquin Valley, while in the cooler regions it was about 12 percent.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Virginia. F. W. Poos (July 20): More abundant on alfalfa this season than at any time during the last 8 years. All cuttings are severely yellowed and injured. The yellowing began to show up as early as June 8, although this insect first appeared the night of May 5, only 2 days earlier than in some other years.

Indiana. J. J. Davis (July 26): Alfalfa yellows, caused by the potato leafhopper, has been unusually prevalent since July 15 throughout a large portion of the southern half of the State and extending north, at least as far as Lafayette. Also less conspicuous to the northern border of the State.

A CLOVER SEED CHALCID (Bruchophagus sp.)

Oklahoma. C. F. Stiles (July 22): The clover seed chalcid is quite numerous in the alfalfa-seed-producing area of Washita County.

THREE-CORNERED ALFALFA HOPPER (Stictoccephala festina Say)

Louisiana. L. O. Ellisor (July): Is very abundant in fields of alfalfa in the southern part of Louisiana. In some fields at least 75 percent of the alfalfa plants are girdled.

COWPEAS

COWPEA CURCULIO (Chalcedermus aeneus Boh.)

Georgia. T. L. Bissell (July 23): The curculio is very destructive to cowpeas this year, unstung pods being hard to find. First-generation adults appeared in cages on July 18.

Alabama. J. M. Robinson (July 21): Active on cowpeas in central and southern Alabama.

VETCH

VETCH BRUCHID (Bruchus brachialis Fahraeus)

Pennsylvania. C. C. Hill (July 7): Heavy damage in Arendtsville by this pest.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis F.)

Louisiana. A. L. Dugas (July): Infestation of the sugarcane moth borer is generally light throughout the sugarcane area. A number of localized areas present a rather heavy infestation. The very abrupt decline in egg deposition in the last 2 weeks has been accompanied by a heavy natural parasitization of Trichogramma. An unidentified larval parasite was collected on July 26.

F R U I T I N S E C T S

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Maryland. E. N. Cory (July 7): Found on Japanese weeping cherry at Pikesville.

Ohio. T. H. Parks (July 22): More than the usual number of complaints have been received about this insect in peach, plum, and cherry.

Indiana. J. J. Davis (July 26): Destructive to cherry at Hammond on July 5 and at Noblesville on July 10.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

New York. R. E. Horsey (July): A couple of branches on glossy buckthorn at Rochester were found to be infested with scale. Young moving scales were noted here on July 20.

Georgia. O. I. Snapp (July 13): Infestation has increased rapidly in a number of peach orchards at Fort Valley, central Georgia.

COMMON RED SPIDER (Tetranychus telarius L.)

Idaho. R. W. Haegele (July 23): Within the last week or 10 days extremely severe infestations of the two-spotted mite have appeared on apples and prunes that were free of mites 2 weeks ago. Prune orchards sprayed 2 weeks ago for European red mite are now badly infested with the two-spotted mite.

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

Massachusetts. A. I. Bourne (July 23): There are indications that the codling moth is more abundant this year than for the last few seasons.



New York. D. W. Hamilton (July 24): First-brood adults began to emerge between July 12 and 15, and daily bait-trap captures are still increasing. Band captures were still increasing on July 19. Peak flight of first-brood moths will probably occur about August 2. Most of the first-brood entrances occurred during the second and third weeks of June; consequently there should not be as much late August and early September injury as there was in 1936.

New Jersey. E. Kostal (July 12): First-generation infestation seems to be the heaviest since 1933.

Delaware. L. A. Stearns (July 23): Injury at close of first-brood attack less than at any time since 1929. First first-brood moths emerged on July 2; peak flights on July 14 and 17. First second-brood eggs deposited on July 5 and first second-brood larvae emerged on July 9.

Virginia. A. M. Woodside (July 21): Adults of the first summer brood began to emerge at Staunton on July 5. Emergence has apparently passed its peak. Infestation is generally fairly light.

Georgia. C. H. Alden (July 21): Well-sprayed orchards at Cornelia have only a light infestation, even tho the weather has been dry and favorable for codling moth development.

Ohio. T. H. Parks (July 22): The bait-pan catch of moths has been rather low since June 23. No definite peak of second-brood moths has yet appeared, nor is one expected. The frequent summer rains have apparently done much to prevent many second-brood entrances.

Indiana. J. J. Davis (July 26): The first full-grown larvae left apples at Orleans, in south-central Indiana, on June 16, 2 days earlier than in 1936 and 3 days earlier than in 1935. However, cool, wet weather slowed up activity and the development of the second-brood worms is several days later than normal.

L. F. Steiner (July 22): Activity of first-brood adults as indicated by bait-trap captures, reached its peak in southwestern Indiana between July 14 and 17, or approximately 1 week later than in 1936. Although first-brood adults are only about half as abundant as the spring brood, the present population is nearly as great as that of the first brood in 1936, which was far above normal. Weather conditions have been much less favorable for second-brood establishment this season. In one moderately well-sprayed orchard first-brood worms averaged more than 25 per 100 apples, with additional sting injuries of 80 per 100.

Illinois. W. P. Flint (July 21): Second-brood codling moth was somewhat delayed because of the cool weather during the first part of July. The hatch of worms is now heavy over the entire southern half of the State.

Michigan. R. Hutson (July 22): The first adults of the second brood are beginning to appear at Buchanan, Monroe, Lapeer, Vandalia, and Allegan.

Minnesota. A. G. Ruggles (July 19): Codling moth is moderately abundant.

Missouri. L. Haseman (July 24): Second-brood worms emerging all over the State but they are being effectively controlled.

H. Baker (July 30): The first first-brood moth was caught June 30 at Saint Joseph, in the northwestern part of the State. The first big catch was on July 15 and the peak catch to date was on July 24. Damage by second-brood worms is at its peak at present and is heavier than was anticipated. Abundance about average.

Nebraska. W. W. Darlington (July): Damage by the codling moth was identified from as far west as Sheridan County in apples sent in the first week of July. The survival of overwintering larvae at Lincoln was 67 percent, as indicated by larvae gathered under bands and placed in racks in the fall of 1936, and 57 percent of the overwintering larvae of the spring brood had pupated by May 12, when the initial 1937 observations were made. Pupation continued to June 24, although bulk pupation had occurred by May 29. The first moth emerged on May 22; peak of emergence, May 29; the last moth of this brood emerged on July 3; 60 percent of the spring-brood moths had emerged by May 29. In bait-trap catches at Agricultural College orchard the first and last moths were taken on May 19 and June 25, respectively, with the peak of catches on May 25, 28, and 29. Egg laying by moths of the spring brood began May 27 and continued through July 3, the largest number of eggs laid on any 1 day being on May 30. The earliest date on which first-brood larvae were found under bands was June 19, the number collected increasing daily to July 6. From July 7 to July 20 the number of larvae collected under bands gradually decreased; a sufficient number was collected on the latter date to indicate continuance of first-brood larvae for several weeks. Pupation of first-brood larvae began June 20 and reached its peak on July 6 and 10. First-brood moths began to emerge on July 3. Peaks of emergence occurred on July 10, 12, 18, 20. Oviposition by first-brood moths was first observed on July 11 and the greatest number of eggs were laid on July 16. First-brood moths have been taken in bait traps since July 11, with the largest single catch on July 16.

#### YELLOW-NECKED APPLE WORM (Datana ministra Drury)

Missouri. L. Haseman (July 24): Larvae were maturing on July 20 and are far more abundant in central Missouri than for years.

#### LEAFHOPPERS (Cicadellidae)

Indiana. J. J. Davis (July 26): Leafhoppers were reported as serious on apple at Valparaiso on June 23 and observations show them to be common and destructive throughout the State.

Massachusetts. A. I. Bourne (July 23): The white apple leafhopper (Typhlocyba pomaria McAtee) is most commonly encountered. This year our attention has been called to an unusual abundance of the green potato leafhopper

(Empoasca fabae Harr.) and where it is abundant it has occurred at least 2 weeks later than the white apple leafhopper; therefore, its control offered further complications.

Connecticut. P. Garman (July 21): Potato leafhopper more abundant on apples than for the last 10 years in Hartford, New Haven County.

W. E. Britton (July 21): Specimens of Empoasca fabae Harr. on apple have been received from Norfolk and Cannondale.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Maine. F. H. Lathrop (July 19): The first fly of the season emerged in a cage at Monmouth, Kennebec County, on June 24. Emergence nearing the peak on July 19.

Massachusetts. A. I. Bourne (July 23): Apple maggot emerging normally and seems to be normally abundant.

Connecticut. P. Garman (July 21): Flies began to emerge this year much earlier than usual in our cages and have been observed in fair numbers in certain orchards.

New York. N. Y. St. Coll. Agr. News Letter (July 6): Apple maggot flies are emerging steadily in the Hudson Valley from cages operated by entomologists of the Poughkeepsie staff. In general, it might be said that emergence records and weather conditions indicate a favorable season for the development of apple maggot.

New Jersey. E. Kostal (July 12): Flies scarce and emergence late. First flies noted on June 25. Larval infestation in early apples light.

FLATHEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Indiana. J. J. Davis (July 26): The flatheaded apple tree borer was reported to be killing maple trees at Frankfort on June 19 and at Greentown on June 22.

Missouri. L. Haseman (July 24): During the month the adult beetles have continued to be unusually abundant, with some evidence of tree infestation by the larvae. Some larvae practically full grown on July 24.

Kansas. H. R. Bryson (July 27): The flatheaded apple tree borer appeared from June 20 to July 23. Because of the drought of the last four or five seasons, trees have become weakened and this insect has caused and is still causing considerable damage to shade and fruit trees, as well as to some shrubs. Reports of injury have been received of this pest injuring walnut trees at Pittsburg and shade trees at Topeka, Arnold, Olathe, Kansas City, and Leavenworth.

Oklahoma. F. A. Fenton (July 20): The flatheaded apple tree borer continues to be possibly the most destructive tree borer in Oklahoma. Reports of borer damage have been received from Claremore, Roff, Chickasha, Roose-



velt, and Prague.

PACIFIC FLATHEADED BORER (Chrysobothris mali Horn)

Arizona. C. D. Lebert (July 22): Quite a number of shrubs in local yards at Phoenix have been severely injured or killed by this borer. Common among the host plants are Pyracantha, rose, sycamore, willow, and poplar. Infestations seem more numerous this season than usual.

APPLE SEED CHALCID (Syntomaspis druparum Boh.)

Maine. F. H. Lathrop (July 19): The first adult emerged in cage at Monmouth, Kennebec County, on June 16. Emergence reached a peak on June 24.

A LEAF MINER. (Ornix geminatella Pack.)

Kansas and Missouri. H. Baker (July 30): This insect, which is usually present in small numbers and of minor importance, is unusually abundant in northeastern Kansas and northwestern Missouri.

PEACH

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Maine. F. H. Lathrop (July 19): Larvae began leaving dropped apples at Monmouth, Kennebec County, during the week ended July 17.

New York. N. Y. St. Coll. Agr. News Letter (July 6): In Monroe County, western New York, the plum curculio has caused almost a total loss of some prune crops.

Delaware. L. A. Stearns (July 23): The peak of first-brood adults, as determined by jarring at Bridgeville, Sussex County, was on July 8. Injury will be light.

Virginia. A. M. Woodside (July 21): Some adults were collected in May at Staunton; still alive in the insectary but feed very little and no eggs have been found for over 2 weeks. All of the beetles from drops have emerged, but none found to contain eggs and no eggs have been found in the cages. Beetles feed greedily but do not mate.

Georgia. O. I. Snapp (July 20): At Fort Valley the second-generation egg deposition began on July 6, just before the Elberta peaches began to ripen; therefore that variety was subjected to a second-brood attack this year. All other varieties of peaches escaped a second brood of larvae. Forty-nine percent of the first-generation females had started to deposit second-generation eggs by July 20. The infestation is lighter than average.

Missouri. L. Haseman (July 24): This pest is seemingly greatly delayed in its breeding. Some varieties of plums at Columbia show considerable numbers of larvae from half to full grown.

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Connecticut. P. Garman (July 21): In Hartford and New Haven Counties second-generation larvae are abundant in many orchards.

New York. N. Y. St. Coll. Agr. New Letter (July 19): In Orleans and Niagara Counties terminal injury of the Oriental Fruit Moth is becoming more conspicuous.

Delaware. L. A. Stearns (July 23): Injury by second brood moderately severe. Brood about mature. Parasitization approximately average.

Virginia. W. J. Schoene (July 21): Infested peach twigs, which became numerous about 2 weeks ago, are dropping off in numbers. Considerable fruit infestation is appearing in some orchards in Staunton.

Georgia. C. H. Alden (July 20): Fruit scored at harvest showed about 2.0 percent infestation, as compared with 0.5 percent in 1936. This insect is increasing slightly over the upper middle and northern parts of the Peach Belt, at Thomaston and Monticello.

Mississippi. C. Lyle (July 23): Peach twigs injured by this insect were received from Columbia on July 16. M. L. Grimes, of Meridian, and D. W. Grimes, of Durant, report injury to peach twigs in their districts.

TARNISHED PLANT BUG (Lygus pratensis L.)

Kansas. H. R. Bryson (July 20): Reported causing injury to peaches at Mound City. In one instance 50 percent of the fruit dropped from the trees after being punctured. More abundant generally than last year.

APRICOT

A CHRYSOMELID (Coscinoptera dominicana F.)

Indiana. J. J. Davis (July 26): Reported eating new leaves of apricot at Anderson on July 7.

GRAPE

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Virginia. C. R. Willey (July): Much more numerous than usual, judging from my own and my neighbors' grapes and by requests for identification and control.

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York. N. Y. St. Coll. Agr. New Letter (July 19): In Niagara County the grape leafhopper hatch appears about complete with older nymphs developing wing pads. In a few vineyards these pests will cause considerable damage. Also reported from Ulster, Dutchess and Columbia Counties.

- Delaware. L. A. Stearns (July 23): Population so light that the usual spray in early July was omitted.
- Virginia. C. R. Willey (July): I never saw a worse infestation of leafhoppers than in Henrico County, 2 miles north of Richmond. They were there in swarms, all stages of nymphs and adults.
- Ohio. T. H. Parks (July 22): Serious outbreaks developed in vineyards of Licking and Franklin Counties, central Ohio, early in July. Spotted outbreaks now in northeastern Ohio.
- Indiana. J. J. Davis (July 26): Grape leafhopper was normally abundant in June, in many sections of the State.
- South Dakota. H. C. Severin (July 23): The woodbine leafhopper (E. cones vitis Harr.) is just now coming into its own and is causing considerable damage to grape, woodbine, and related plants.
- Utah. G. F. Knowlton (July 1): Grape leafhoppers are causing some injury to Virginia creeper and grape in northern Utah.
- California. M. S. Morley (July 9): Vineyardists in Kern County are dusting and spraying grapevines for control of grape leafhoppers. Some untreated vineyards are showing considerable injury from attacks of this pest.

GRAPE PHYLLOXERA (Phylloxera vitifoliae Fitch)

- Ohio. E. W. Mendenhall (July 19): The grape phylloxera is injurious, affecting the Clinton variety.

PECAN

WALNUT CATERPILLAR (Datana integerrima G. & R.)

- Kentucky. M. L. Didlake (July 24): Walnut worms are generally abundant.
- Missouri. L. Haseman (July 24): Walnut datana has been worse this year than I have ever seen it.
- Oklahoma. F. A. Fenton (July 20): The walnut datana was very prevalent throughout the Pecan Belt of the State, and has caused widespread defoliation and stripping of pecan and walnut trees. This is the third successive season stripping has occurred. The first moths of the second generation have emerged. Reports of damage by first-generation moths have come from Muskogee, Bristow, and Prague.

A PECAN PHYLLOXERA (Phylloxera sp.)

- Texas. F. L. Thomas (July 23): Phylloxera are rather severe on pecan trees in San Antonio.



WALNUT

PECAN LEAF CASEBEARER (Acrobasis juglandis LeB.)

Connecticut. E. P. Felt (July 23): The pecan leaf casebearer was reported as causing considerable injury to black walnut foliage at Brookfield.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Mississippi. C. Lyle (July 23): Inspectors in the Meridian and Durant areas report heavy infestations of the citrus whitefly on ornamentals. Also reported on satsuma at Poplarville.

Louisiana. I. J. Becnel (July): Most whiteflies are in the nymphal stage.. Very few adults found at Buras, south of New Orleans. Adults and eggs numerous in a grove at the extreme northern end of Plaquemines Parish.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Louisiana. I. J. Becnel (July): Heavy infestations were found in many groves near Buras and Venice south of New Orleans, in Plaquemines Parish. Crawlers and young scales are very numerous.

SNOW SCALE (Chionaspis citri Comst.)

Louisiana. I. J. Becnel (July): An infestation of snow scale was found in a grove near Triumph, Plaquemines Parish. Adults very numerous, especially on twigs and medium-sized branches.

A CITRUS MITE (Anychus clarkii McG.)

Texas. S. W. Clark (July 1): Very abundant in most orchards at Weslaco.  
(July 15): Abundant and causing some damage near Mission and Edinburg.

CALIFORNIA RED SCALE (Chrysomphalus aurantii (Mask.))

Texas. S. W. Clark (July 15): Infestations are becoming serious in the Mission and Edinburg areas.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (July 23): Over a considerable portion of the Citrus Belt, particularly in the northern part, the July rainfall was considerably less than normal; therefore rust mites persisted longer than usual.

Louisiana. I. J. Becnel (July): Few growers have complained of rust mite infestations. Several growers in Plaquemines Parish have dusted with sulphur, to eliminate the chances of damaged fruit.

Texas. S. W. Clark (July 15): Moderately abundant at Weslaco and over the entire Rio Grande Valley.

TRUCK - CROP INSECTS

BLISTER BEETLES (Meloidae)

Vermont. H. L. Bailey (July 26): Black blister beetles (Epicauta pennsylvanica Deg.) are reported as damaging potato plants and larkspur in east-central Vermont.

New York. R. W. Leiby (July): The ash-gray blister beetle (Macrobasis unicolor Kby.) is reported as proving disastrous to the potato crop in Montgomery County.

Tennessee and Kentucky. L. B. Scott (July 29): Many reports have been received particularly from the vicinity of Montgomery County, Tenn. E. vittata Fab. and M. unicolor predominate. Severe damage to watermelons has been noted.

SOUTHERN GREEN STINKBUG (Nezara viridula L.)

Florida. J. R. Watson (July 23): Has been scarce in the peninsula, but was very abundant in the western part of the State last month.

Alabama. J. M. Robinson (July 21): Green stinkbug adults are feeding on beans and peas in southeastern Alabama and there is a moderate infestation at Auburn.

Louisiana. C. O. Eddy (July): The green stinkbug, the southern leaf-footed plant bug, and the squash bug have been abundant during the last month.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Maine. G. W. Simpson (July 18): In Hancock County, eggs laid early hatched well and the resulting larvae have finished feeding and have entered the ground to pupate. Eggs are still being laid and considerable damage is being done in certain sections by the larvae.

New York. N. Y. St. Coll. Agr. New Letter (June 28): Potato beetles are beginning to appear and are doing some damage in Saratoga County, eastern New York. Beetles and slugs appeared in small numbers during this week in Erie County. They are laying eggs freely on eggplant in Monroe County. (July 19): In Monroe County there are more bugs than usual.

Minnesota. K. A. Kirkpatrick (July 15): Farmers are commenting on the small number of beetles this year, as compared to other years. Some large growers report that they have not had to spray for them. It is interesting to note that the irrigated fields show the least presence of larvae. Irrigation is overhead, and apparently the cool water discourages these insects from doing damage.

North Dakota. J. A. Munro (July): From scarce to moderately abundant over the potato-growing districts I have examined in Walsh and Cass Counties, but sufficiently injurious to require poisoning.

Alabama. J. M. Robinson (July 21): Potato beetles are moderately abundant on eggplant and tomatoes at Auburn.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Vermont. H. L. Bailey (July 24): Less abundant than usual throughout the State.

Massachusetts. A. I. Bourne (July 23): Have been unusually abundant and persistent on garden and field crops, particularly on tomatoes, potatoes, and tobacco.

Connecticut. N. Turner (July 19): As abundant as usual and locally very destructive.

New York. N. Y. St. Coll. Agr. News Letter (August 2): In Suffolk County leafhoppers and flea beetles have been responsible for the early death of Cobblers in many instances.

North Dakota. J. A. Munro (July 20): Are appearing most in potato fields. Here at Fargo adults of the first brood began appearing about July 16.

Utah. G. F. Knowlton (July 1): Injury to potato and tomato plants observed in the Salt Lake area.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Alabama. J. M. Robinson (July 21): Moderately abundant at Auburn.

Texas. F. L. Thomas (July 23): Damaging tomato plants in Kendall County, west-central Texas.

CORN EAR WORM (Heliothis obsoleta F.)

Delaware. L. A. Stearns (July 2): Causing serious injury to tomato at Clayton.

Maryland. E. N. Cory (July 27): Early and numerous infestation on tomatoes July 7. On July 24 reports beginning to come in of injury to corn. Infestation general over the State.

J. A. Hyslop (August 7): One out of 10 ears infested at Avanel.

Georgia. T. L. Bissell (July 22): Tomatoes at Atlanta and Griffin are much freer of the corn ear worm than they were a month ago.

Ohio. T. H. Parks (July 22): Corn ear worms have caused serious damage to early tomatoes along the Ohio River and to the early sweet corn now being marketed.



Indiana. J. J. Davis (July 26): The corn ear worm has been an outstanding pest of tomatoes during the last month. The first report came on June 23 from Gibson County, closely followed by reports from other counties in the southern half of the State. In some fields this first brood of worms infested 80 percent of the fruits. The only reports of infestation in corn came to us from Jefferson County on June 29 and from Spencer County on June 30. These infestations were earlier than usual, doubtless because the mild winter permitted the insect to overwinter farther north than normal, although observations indicate that they did not winter as far north as Orleans. Most of the worms have left tomatoes and are in the pupal stage in the soil. No appreciable infestations were found in tomatoes north of Indianapolis.

Illinois. W. P. Flint (July 21): Larvae much more abundant than usual over the entire State. Severe injury has occurred to tomatoes and sweet corn in southern Illinois. Some damage to tomatoes in greenhouses in northern Illinois has been reported.

Kentucky. M. L. Didlake (July 24): Tomato fruit worms are doing considerable damage at Lexington, Versailles, and Calhoun.

California. J. Wilcox (July 15): In southern California damage in several fields of early tomatoes has increased with the advance of the season. The first picking, made about June 20, showed about 10-percent damage, whereas the third picking, made about July 10, showed about 20-percent damage, as did also the first picking of intermediate tomatoes made about July 15.

#### TOMATO WORM (Protoparce sexta Johan.)

Tennessee. G. M. Bentley (July 21): Has been unusually bad on partly grown and full-grown tomatoes generally throughout the State. One grower reported that he picked 16 bushels and, upon grading them, had 1 bushel free from the worm.

Utah. H. E. Dorst. (July 28): Tomato fruit worm eggs average about one per tomato plant in the Hooper district, northern Utah. Damage is moderate.

G. F. Knowlton (June 30): Hornworms are damaging tomatoes (July 14): Hornworm larvae are damaging tomato foliage at Willard, Tremonton, and Utah Hot Springs. (July 26): Hornworms have damaged tomato foliage at Salen and Geneva, in Utah County.

Nevada. G. G. Schweis (July 30): We have had two outbreaks of the tomato sphinx moth (P. sexta) larvae on potato plants in July. Both of these outbreaks were rather widespread, one being in Douglas County and one in Pershing County. The Douglas County outbreak was controlled by ravens which appeared in the infested fields in large numbers and got practically all of the insects. In Pershing County it was necessary to resort to dusting with calcium arsenate for effective control.



California. A. E. Michelbacher (July 19): The first brood of hornworms for the most part are in the pupal stage. In places in the warmer interior valleys in middle and central California considerable damage occurred.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Massachusetts. A. I. Bourne (July 23): Not very abundant.

Connecticut. N. Turner (July 19): Unsprayed potatoes show serious tip-burn from E. fabae. Abundance, usual.

New York. N. Y. St. Coll. Agr. News Letter (June 28): In Suffolk County the leafhoppers are beginning to appear. Leafhoppers can be found in only relatively small numbers at present. (July 2): Leafhoppers are becoming numerous on potatoes. (July 12): In Dutchess County leafhopper activity is subsiding, with a great deal of injury having been done to the last 6 to 10 leaves on terminal growth of more vigorous varieties. In some instances the smaller leaves have curled, dried, and dropped. (July 19): In Orleans County hoppers are on the increase. (July 26): In Orange County on black dirt there has been considerable injury from leafhoppers, and quite a few fields of potatoes have died prematurely. (August 2): In Suffolk County leafhoppers and flea beetles have been responsible for the early death of Cobblers in many instances. Leafhoppers have been particularly severe in the area about Huntington and East Northport.

Maryland. E. N. Cory (June 29): Leafhoppers are infesting potatoes at Easton.

Virginia. F. W. Poes (July 15): Infestation at Holland and Suffolk. Potatoes were much more severely injured than usual. After the potatoes died these leafhoppers moved to peanuts and cotton, and fields of these crops adjoining potatoes are being severely injured. East of Suffolk, where more potatoes were grown, the injury to peanuts is general.

Indiana. J. J. Davis (July 26): Abundant and destructive to potatoes and beans throughout the State.

North Dakota. J. A. Munro (July 20): Moderately abundant to abundant near Fargo. Scarce in fields at Park River, Walsh County.

A LEAFHOPPER (Empoasca filamenta DeL.)

Utah. G. F. Knowlton (June 30): This leafhopper is moderately abundant on potato foliage and beans at Roy, Brigham, Pleasant Grove, and Salt Lake City. Injury evident in some cases.

POTATO APHID (Illinoia solanifolii Ashm.)

Massachusetts. A. I. Bourne (July 23): The hot weather of the last 2 weeks has been favorable for the rapid increase of potato aphids and in many fields these are beginning to become very abundant.

Connecticut. N. Turner (July 19): Infestation not quite so heavy as a year ago.

New York. N. Y. St. Coll. Agr. News Letter (July 6): Aphid can be readily found, although not numerous enough to cause any injury in Suffolk County. (July 12): Beginning to appear in some fields in Nassau County. (August 2): Although the aphids were very abundant for a period of about 3 weeks they are now heavily parasitized and disappearing rapidly in Suffolk County.

Indiana. J. J. Davis (July 26): Reported very abundant on tomatoes at Greenfield, Tipton, Muncie, and Fowlerton from June 25 to July 5.

Utah. G. F. Knowlton (July 26): Damaging tomatoes in one field at Lindon, in Utah County.

#### BUCKTHORN APHID (Aphis abbreviata Patch)

Maine. G. W. Simpson (July 19): Development on buckthorn was largely favorable, except for syrphid-fly larvae. While colonies were less numerous than usual they were larger, therefore the migrating forms were probably as numerous as usual. Dispersal from summer food plants is now going and the infestation on potatoes is more general throughout Aroostook County than that of the other three potato aphids.

#### BEET LEAFHOPPER (Eutettix tenellus Bak.)

Utah. G. F. Knowlton (June 30): Moderately abundant on potatoes at Roy. (July 20): Curly-top of tomatoes carried by the beet leafhopper averages 23 percent of plants infested at Utah Hot Springs, more than 50 percent in some fields at Hooper, 15 percent at Perry, 11 percent at Sunset, and other localities ranged from 2 to 10 percent in fields examined.

#### TARNISHED PLANT BUG (Lygus pratensis L.)

Vermont. H. L. Bailey (July 26): Abundant on potato plants in Franklin County, northwestern Vermont, July 23. Some damage to tips of new growth.

Indiana. J. J. Davis (July 26): Responsible for severe injury to 7 acres of potatoes near Rochester on July 17.

#### COTTON DAUBER (Lygus spp.)

Utah. G. F. Knowlton (June 30): L. elisus Van D. and L. hesperus Knight are injuring potato foliage causing wilting in fields examined at Willard, Midvale, Granite, Pleasant Grove, and Hooper.

#### LEAF-FOOTED BUG (Leptoglossus phyllopus L.)

Georgia. T. L. Bissell (July 12): At Griffin, central Georgia, adult bugs are swarming on tomato fruits.

#### SUCKFLY (Dicyphus minimus Uhl.)

Texas. F. L. Thomas (July 23): Injuring tomatoes at Floresville in Wilson County, southern Texas.

POTATO PSYLLID (Paratrioza cockerelli Sulc.)

Utah. G. F. Knowlton (June 30): Not yet abundant on potato plants at Roy, Brigham, Plain City, and Salt Lake City. Adults were abundant on matrimony vine, however, at Nebo and Moroni.

POTATO STALK BORER (Trichobaris trinotata Say)

Maine. G. W. Simpson (July 19): Potato stalks killed by a stalk borer caused enough injury in early July to attract the attention of several farmers. Injury was more extensive than in recent years.

Indiana. J. J. Davis (July 10): Damaging eggplant at Terre Haute.

Mississippi. C. Lyle (July 2): Larvae, probably belonging to this species, were in an eggplant stem received from Gunnison.

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

New York. N. Y. St. Coll. Agr. News Letter (August 2): Causing severe damage to wax beans, and some to dry beans in Broome County. Green string beans do not seem to show as much damage as the others.

New Jersey. E. Kostal (July 12): Damage is severe in Morganville, Monmouth County. This species has been exceptionally abundant and destructive this season.

Delaware. L. A. Stearns (July 23): Infestation has developed rapidly since last report and will exceed that of 1936.

Maryland. E. N. Cory (July 26): Is generally injurious.

South Carolina. C. O. Bare (July 12): Approximately two dozen plants in a bean garden in Windermeer, Charleston County, were found to be severely damaged.

Georgia. O. I. Snapp (July 20): Noticeably less abundant than usual at Fort Valley, central Georgia.

T. L. Bissell (July 20): Beans have been free from this pest for 3 or 4 weeks. New adults are now present on beans that have been watered at Experiment, central Georgia.

Ohio. T. H. Parks (July 22): Damage from this insect is now quite severe in Ohio.

Indiana. J. J. Davis (July 19): Abundant at Fort Wayne in the northeastern corner of the State. Showed considerable defoliation of garden beans in the southern part of the State from June 20 to 22.



Tennessee. L. B. Scott (July 15): Damage moderate. Is normally abundant. The infestation is more severe than in 1936.

Mississippi. C. Lyle (July 23): Complaints have been received from Yalobusha County this month.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

Virginia. A. M. Woodside (July 21): Doing almost as much damage to beans in some gardens at Staunton as the bean beetle. It eats holes in the pods.

Kentucky. M. L. Didlake (July 24): Seriously damaging beans at Calhoun and corn at Berry.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Louisiana. La. Agr. Expt. Sta. Bug News. (July 21): The holes that are being made in the leaves of beans and soybeans now are caused by the bean leaf beetle.

ROSE CHAFER (Macrodactylis subspinosus F.)

New York. N. Y. St. Coll. Agr. News Letter (July 6): In Wayne County the rose chafers were found to be causing rather severe damage to a 5-acre field of kidney beans.

BEAN THRIPS (Heliothrips fasciatus Perg.)

Mississippi. C. Lyle (July 23): Thrips were found injuring butter beans at Jackson and Moss Point.

Utah. G. F. Knowlton (July 13): Bean thrips are damaging string beans at Pleasant Grove.

BEAN APHID (Aphis rumicis L.)

Michigan. R. Hutson (July 22): Causing trouble in beanfields about Lake Odessa.

CABBAGE

IMPORTED CABBAGE WORM (Ascia rapae L.)

New York. R. W. Leiby (July 19): Severe injury to cabbage is threatened by the imported cabbage worm, as the butterflies are present in large numbers. Many eggs have been deposited on young late cabbage in western New York. On July 5 a 3-acre field of early cabbage was being infested at Elmira and was white with adults in flight. The picture was suggestive of a cloud of white feathers darting back and forth over the field.

N. Y. State Coll. Agr. News Letter (August 2): In Orleans County the first brood of imported cabbage worms is practically through. Second-brood butterflies are now depositing eggs.



Indiana. J. J. Davis (July 26): More common than normal at this season.

Minnesota. A. G. Sandahl (July 20): Very abundant at Lake Crystal, Blue Earth County.

South Dakota. H. C. Severin (July 3): The imported cabbage worm again promises to be destructive. Full-grown caterpillars were observed feeding on cabbage during the week ended June 26.

Utah. G. F. Knowlton (July 1): Cabbage butterflies are moderately abundant in northern Utah, with some damage from the diamondback and cabbage butterfly larvae on young plants.

#### SOUTHERN CABBAGE WORM (Ascia protodice Bdv. & Lec.)

South Dakota. H. C. Severin (July 2): A terrific outbreak has taken place. The ratio this year of the southern and imported butterflies must be at least 100 to 1. This is very unusual for South Dakota, where the southern cabbage butterfly is ordinarily scarce.

#### DIAMONDBACK MOTH (Plutella maculipennis Curt.)

New York. N. Y. State Coll. Agr. News Letter (July 12): At Geneva, Ontario County, the most common cabbage worm is the larva of the diamondback moth. Usually this species does not become very abundant until August or September. In Monroe County diamondbacks are present in all stages and are beginning to lay eggs freely. (July 26): In Niagara County the diamondback has caused considerable loss.

Utah. G. F. Knowlton (July 1): Diamondback moths abundant in northern Utah, with some damage on young cabbage plants.

#### CABBAGE LOOPER (Autographa brassicae Riley)

New York. N. Y. State Coll. Agr. New Letter (June 28): In Niagara County the loopers can be found. (July 12): In Onondago County cabbage loopers are appearing in numbers. (July 6): In Suffolk County they are becoming quite numerous in the cauliflower seedbed. (July 9): In Ontario County, as is usually the case this time of the year, eggs and larvae are scarce.

Indiana. J. J. Davis (July 26): Caterpillars have not yet showed up in injurious numbers.

South Dakota. H. C. Severin (July 23): Beginning to show up in large numbers in many localities.

Nebraska. D. B. Whelan (July 22): Moths have been very numerous at lights at Lincoln; most abundant from July 14 to 22.

CABBAGE APHID (Brevicoryne brassicae L.)

New York. N. Y. State Coll. Agr. News Letter (July 6): In Suffolk County the aphids are beginning to appear in cauliflower seedbeds. In Ontario County there were practically no cabbage aphids up to July 9.

South Dakota. H. C. Severin (July 23): Beginning to show up in large numbers in many localities.

Utah. G. F. Knowlton (July 3): Just beginning to infest cabbage plants at Morgan.

CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Indiana. J. J. Davis (July 26): Adults were reported feeding on cabbage and radish foliage at Idaville on July 2 and on cabbage at Winamac on July 9, both localities in the northern third of the State.

Michigan. E. I. McDaniel (July 13): Working on plants at Cassopolis, causing some little injury. This species is rather rare.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia. W. R. Lewis (July 21): Destroying all crucifers at The Plains.

Tennessee. G. M. Bentley (July 21): Several reports have come to the office of very heavy infestations on cabbage.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

New York. N. Y. State Coll. Agr. News Letter (July 19): In Nassau County a late infestation of the cabbage maggot caused a 50-percent loss on a 1-acre field of broccoli in Ozone Park.

PEAS

PEA APHID (Illinoia pisi Kltb.)

Maine. J. H. Hawkins (July 17): Planting dates later than other years. More abundant than last year at Hartland.

New York. N. Y. State Coll. Agr. News Letter (July 6): In Niagara County the pea aphid has let up, except in badly infested plantings. (July 12): In Ontario County at Geneva by July 7 the pea aphid had been decreasing steadily for the past 2 weeks; now greatly reduced in most pea fields in western New York.

Utah. G. F. Knowlton (July 1): Control operations are now in progress in Weber, Cache, Box Elder, and Utah Counties. Most of the early peas have escaped serious injury. (July 20): Decreasing in abundance on peas and alfalfa.

Idaho. C. Wakeland (July 21): Has not caused severe injury to peas in Idaho, although it is somewhat more abundant in northern Idaho than usual. Most of the peas in southeastern Idaho were harvested for canning with little loss, as compared to complete failure in many fields last year.

SAY'S STINKBUG (Chlorochroa sayi Stal)

Utah. G. F. Knowlton (July 2): Adults have been observed recently on peas in several localities in Cache County.

MELONS AND CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata F.)

New York. N. Y. State Coll. Agr. News Letter (June 28): In Niagara County the striped cucumber beetle has been numerous and destructive. (July 6): In Monroe County the cucumber beetles on melons have been very numerous and the frequent rains have necessitated frequent dusting for these pests. (July 12): In Onondaga County cucumber beetles are numerous on squash and melons. (July 19): In Orleans County the cuke beetles are very abundant, mostly the jail-bird type, with stripes.

Kentucky. M. L. Didlake (July 24): The striped cucumber beetle is abundant at Frankfort and Princeton.

Wisconsin. C. L. Fluke (July 20): The larvae are injuring roots of cucumbers and melons in Dane County. Damage in two fields estimated at 25 percent.

Minnesota. A. G. Ruggles (July 19): The striped cucumber beetle is moderately abundant.

Missouri. L. Haseman (July 24): Early in the season few complaints were received regarding this pest but since the middle of July it seems to have appeared in central Missouri in goodly numbers, attacking late-planted cucurbits.

Tennessee. L. B. Scott (July 16): Present in numbers sufficient to destroy many plantings of melons in Montgomery County. The injury appears to be unusually severe in the stems. In some plantings the larvae are causing more injury than the adults.

Mississippi. C. Lyle (July 23): The striped cucumber beetle was attacking watermelons at Poplarville and in Grenada, Yalobusha, and Lafayette Counties during this month. This insect was also reported attacking cucumbers at McAdams.

MELON APHID (Aphis gossypii Glov.)

Minnesota. K. A. Kirkpatrick (July 15): Aphids are showing up in a very general and serious infestation on melon and cucumber at Minneapolis, Hennepin County. Some fields of cucumbers are reported to be practically killed.



South Dakota. H. C. Severin (July 23): The cucumber aphid was abundant early in July in Brookings County. Ordinarily we begin to receive complaints about this pest early in August.

PICKLEWORM (Diaphania nitidalis Stoll)

Mississippi. H. Gladney (July 23): The pickleworm was causing serious injury to cantaloups in two localities in Harrison County.

SQUASH

SQUASH BUG (Anasa tristis Deg.)

New York. N. Y. State Coll. Agr. News Letter (July 6): Squash bugs have ruined several fields of squash in Niagara County. (July 26): The squash bug has been abundant in all the fields visited in Nassau County.

Virginia. C. R. Willey (July 12): Was called out to tell a farmer at Mechanicsville how to get rid of bugs that were killing watermelon vines. The squash bugs had moved from summer squash onto a 5-acre patch of watermelons. They were present by thousands and had ruined about 1 acre, a solid block adjacent to the squash. Were scattering and occurring in spots over the rest of the melon patch. A few adults were present but most were nymphs from one-third to one-half grown. Handfuls of cast skins were seen around dead vines.

Missouri. L. Haseman (July 24): This pest is attracting some attention, though no more than usual in July.

Tennessee. L. B. Scott (July 16): The squash bug has appeared in more than normal numbers. Many plantings are being completely destroyed in Montgomery County.

Alabama. J. M. Robinson (July 21): The squash bug was reported as abundant on watermelon vines at Montevallo on July 15.

Mississippi. C. Lyle (July 23): This insect was damaging squash and watermelon at Europa on June 30.

Louisiana. C. O. Eddy (July): The squash bug has been abundant during the last month.

Utah. G. F. Knowlton (July 1): Squash bugs are active throughout northern Utah, being about normally abundant.

Utah and Nevada. E. H. Davis (July 16): In southeastern Utah and southern Nevada the squash bug is thick on all melons and cucumbers. Cantaloups are dying rapidly; the squash bug killing the vines.

California. J. Wilcox (July 17): Bugs were present at Riverside in all stages in the 12-acre field and had killed about 5 percent of the vines and parts of about 10 percent of the others.



SQUASH BORER (Melittia satyriniformis Hbn.)

New York. N. Y. State Coll. Agr. News Letter (July 12): At Geneva, Ontario County, the squash vine borer started to appear on June 29 and it is still present in the field and laying eggs.

South Carolina. C. O. Bare (July 15): About 60 vines in a garden planting in Windermere, Charleston County, were found to be badly damaged and bearing little fruit. As many as five moths were seen ovipositing at the same time.

Tennessee. L. B. Scott (July 15): The squash borer is found in approximately normal numbers in Montgomery County.

CELERY

TARNISHED PLANT BUG (Lygus pratensis L.)

New York. N. Y. State Coll. Agr. News Letter (July 12): In Niagara County the tarnished plant bugs are showing a little injury on muck celery. (July 26): The plant bug was repeating rapidly the first of the week. (July 19): Throughout Orange County plant bug injury on celery is general.

R. W. Leiby (July 19): In Wayne and Orleans Counties typical injury is being done to muck-grown celery. Injury seems to be more pronounced than usual.

CARROT RUST FLY (Psila rosae F.)

New York. N. Y. State Coll. Agr. News Letter (July 26): In Orange County injury to early set celery in the field has been unusually serious in some sections. A few blocks of early carrots have been almost completely ruined.

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

Connecticut. N. Turner (July 21): Thrips and blight killed set onions at Southington early in July. Thrips have been unusually abundant and seed onions are showing serious injury from them.

New York. N. Y. State Coll. Agr. News Letter (June 28): In Wayne County onions show a rather high infestation of thrips. (July 19): The onion thrips have practically destroyed the bunching onions in all parts of Nassau County. (July 26): In Orange County the population is building up very rapidly and will cause considerable injury in some sections.

Nebraska. D. B. Whelan (July 22): Onion thrips were numerous at Lincoln early in July.

California. R. E. Campbell (August 2): A quotation from the July 31 issue of the California Cooperative Crop Reporting Service says: "The late onion crop in the Delta Section is very spotted. Thrips has been particularly bad on the later plantings and it is doubtful whether some of the acreage will warrant harvesting at present prices, because of the small size of the onions."

ONION MAGGOT (Hylemyia antiqua Meig.)

New York. N. Y. State Coll. Agr. News Letter (June 28): In Saratoga County rather heavy loss has been experienced for the first time in several years. Onion maggots on bunch onions are more serious than usual in Monroe County.

Idaho. J. R. Douglass (July 15): Have recieved numerous complaints about onion maggots destroying stands of onions in Twin Falls.

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

New York. N. Y. State Coll. Agr. News Letter (June 28): In Wayne County the yellow-necked datana worms were found feeding on onions in several places in one field.

SWEET CORN

CORN EAR WORM (Heliothis obsoleta F.)

Connecticut. N. Turner (July 21): About 5 percent of the extra early corn in southern Connecticut was infested. Larvae have already left the corn.

New York. N. Y. State Coll. Agr. News Letter (July 26): In Nassau County there is an unusually heavy infestation in all varieties of sweet corn. (August 2): In Westchester County this pest is causing considerable trouble and damage to sweet corn. Granite Springs and Yorktown have about 1,250 acres about 1 quarter of which is infested.

Virginia. G. E. Matheny (August 2): Serious ear damage being caused by larvae in most plantings of sweet corn at Roanoke. (July 20): At Wytheville the pest is severe in some fields. Both sweet and field corn are being attacked, mostly at growing tips, base of tassel, and stalk.

A. M. Woodside (July 21): At Staunton the corn ear worm has been numerous on beans.

Georgia. T. L. Bissell (July 1): Very bad in sweet corn at the Experiment Station. Not yet in tomatoes in adjoining fields.

Indiana. E. V. Walter (July 16): Eggs are present on about a third of the ears of early sweet corn at Lafayette. Most first-brood larvae have matured and left the ears.

Alabama. J. M. Robinson (July 21): Adults are depositing eggs on late corn.

Utah. G. F. Knowlton (July 3): Corn ear worms are damaging ears and tassels of early sweet corn in parts of Davis County. At Woods Cross the larvae have damaged 2 percent of the tassels of early corn. (July 9): Of the earliest sweet corn now being harvested south of Farmington, 75 percent is infested; 25 percent of the worms have left the ears, apparently having matured; only 10 percent of the corn not yet ripe in the area is infested.

CORN FLEA BEETLE (Chroetocnema pulicaria Melsh.)

New York. N. Y. State Coll. Agr. News Letter (July 12): In Nassau County the corn flea beetle was found on July 4 on Staten Island on Golden Bantam corn. Present in abundance in most cornfields.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

New York. N. Y. State Coll. Agr. News Letter (August 2): In Albany County severe damage to sweet corn is apparent. At least one grower reported feeding 25 percent of his corn to hogs and selling another 10 percent of moderately infested ears. A few pupae were observed on July 26. Most of the worms were nearly full grown, although a few were only one-third grown.

ZEBRA CATERPILLAR (Manestra picta Harr.)

Indiana. J. J. Davis (July 26): The zebra caterpillar was reported abundant on garden sweet corn at Tipton on June 28.

Utah. G. F. Knowlton (June 30): Damaging alfalfa and sugar beets at Kaneshville and peas at Ephraim.

STRAWBERRY

STRAWBERRY ROOT WEEVILS (Brachyrhinus spp.)

New York. N. Y. State Coll. Agr. News Letter (June 28): Strawberry root weevils, B. ovatus L., B. rugosostriatus Goeze, and B. sulcatus F., have caused severe damage in a 2-year-old strawberry bed near Lycoming, Oswego County. Most of the population is composed of the first two species listed. Mostly pupae are present in the soil, although some adults and larvae can be found.

STRAWBERRY LEAF ROLLER (Ancyliis comptana Froel.)

Kansas. H. R. Bryson (July 20): The second generation of the strawberry leaf roller reported more abundant in northeastern Kansas than it has been during the last 3 years; abundant also at Manhattan.

Utah. G. F. Knowlton (July 3): Strawberry leaf rollers are pupating, although from 75 to 90 percent still are larvae in Cache County. (July 17): Ninety-seven percent of the first generation are in the moth stage at Orem, Utah County. Parasitization is rather heavy.



## SUGAR BEETS

### FALSE CHINCH BUG (Nysius ericae Schill.)

- Oklahoma. F. A. Fenton (July 20): The false chinch bug has been reported as causing damage in Sayre and Grandfield, in southwestern Oklahoma.
- Texas. F. L. Thomas (July 23): More abundant than usual in northwestern Texas, damaging cotton in many counties the latter part of June.
- Idaho. C. Wakeland (July 21): The false chinch bug is reported as injuriously abundant on grain in the dry-farming district of Elmore County, in south-central Idaho.
- Utah. G. F. Knowlton (July 26): Very abundant in many parts of Sanpete and Sevier Counties. Damage to beets, garden plants, and sweetclover has been observed.
- Arizona. C. D. Lebert (July 21): During July we have had many calls regarding this pest. It has been coming in from vacant lots into yards and homes--few cases of severe injury to shrubbery.

### BEET LEAFHOPPER (Eutettix tenellus Bak.)

- Utah. H. E. Dorst (July 28): Resistant beets in Sevier Valley show on the average about 30 percent of obvious cases of curly-top. Moderate damage in central Utah. Tomatoes in the Hooper district show about 40 percent with blight as the result of feeding of the beet leafhopper. Damage is much less in other parts of the State.

## PARSNIP

### PARSNIP WEBWORM (Depressaria heracliana Deg.)

- New York. N. Y. State Coll. Agr. News Letter (July 19): In Nassau County a severe infestation of the parsnip webworm was found in the Hicksville district, 90 percent of the plants showing injury.

## TOBACCO

### TOBACCO FLEA BEETLE (Epitrix parvula F.)

- Maryland. E. N. Cory (July 16): Present at Mt. Airy on tobacco.
- Florida. F. S. Chamberlin (July 5): Infestations are the heaviest in several years in Gadsden County.
- Tennessee. L. B. Scott (July 16): The tobacco flea beetle is present in approximately normal numbers in Montgomery County. Earlier in the season this species was found in less than normal numbers but the infestation is increasing slowly.



HORNWORMS (Protoparce spp.)

Florida. A. H. Madden (July 12): Larvae of P. sexta Johan. have been much less abundant in Gadsden County than normal. Scarcity appears to be due to the dry weather late in June and to the very efficient attacks of predaaceous wasps, Polistes spp.

Tennessee. L. B. Scott (July 16): P. sexta and P. quinquemaculata Haw. are causing moderate damage in Montgomery County. Continued dry weather has delayed emergence. The infestation is approximately normal.

TOBACCO BUDWORM (Heliothis virescens F.)

New York. N. Y. State Coll. Agr. News Letter (July 26): In Nassau County a worm tentatively identified by Dr. Carruth as the tobacco budworm has been feeding on corn and various grasses in the Hicksville and Wantagh areas. This week it was found to have completely destroyed about 1 acre of Chinese cabbage.

Florida. F. S. Chamberlin (July 12): The tobacco budworm is about normally abundant in Gadsden County.

AN APHID (Trifidaphis phaseoli Pass.)

Connecticut. A. W. Morrill Jr. (July 6): Root aphid feeding on the roots of about a half an acre of sun-grown tobacco at Windsor. The field had previously been used as a pasture.

C O T T O N I N S E C T S

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Texas. A. J. Chapman (July 10): Records made in 25 fields scattered over the Presidio Valley showed an average bloom infestation of 3.37 percent, as compared to 5.16 last year. In some fields planted early to the eastern varieties of cotton, good crops of bolls are already set, and most of this will escape injury.

BOLL WEEVIL (Anthonomus grandis Boh.)

South Carolina. F. F. Bondy (July 10): In the fields at Florence first-generation weevils are emerging in large numbers. (July 24): Weevils are becoming very numerous in many fields, some of which are bare of blooms. Reports from adjacent counties indicate that weevils are causing more damage than they have for years.

Georgia. T. L. Bissell (July 20): Larvae and adults are very scarce in central Georgia having been reduced by dry weather from a light infestation, which was present early in the month.

P. M. Gilmer (June 26): In the northern section of the State from Macon, or possibly Perry, north and east the infestation is heavy.

About Tifton, in southern Georgia, it is not yet serious enough to be doing any damage. The first new weevils emerged in the insectary at Tifton early in the week. (July 24): Upland cotton in southern Georgia has set a large crop of bolls, which are fairly well matured and past danger. Part of the Sea Island cotton failed to set early bolls, therefore most of it has a scarcity of well-grown bolls and is likely to suffer

Florida. K. H. Smith (July 24): In Alachua County, northern Florida, square infestation in Sea Island fields under observation showed an average of 6.9 percent for the week ending July 3 and on July 24 an average of 27.5 percent.

Alabama. J. M. Robinson (July 21): Sufficiently abundant to warrant dusting in several localities in central-south Alabama. The infestation at Auburn is light, as compared with previous years.

Mississippi. E. W. Dunnam (July 17): In the Delta section (Washington County) boll weevils were increasing in infested areas very slowly, but spreading farther from hibernation quarters. There was some dusting, especially on the late cotton, but the earlier cotton is too far advanced for injury, and conditions on the whole are better than last season.

C. Lyle (July 23): The average infestation of the boll weevil for the month of July has been around 8 percent, being much higher in a few fields.

K. E. McCoy and J. E. Ragland (July 24): In Oktibbeha County, east central Mississippi, the infestation was increasing very slowly, the average being 5.7 percent, as compared with 4.4 percent on July 3. This was higher than during the same week in 1936 (1.93 percent) but very much lower than for the same week in 1935 (41.2 percent) and in 1934 (50.2 percent).

Miss. Weekly Cotton Insect Rpt. (July 26): Weevils were found on 82 farms, with an average infestation of 10½ percent, as compared with 10 percent last week, 4 percent on this date last year, and 30 percent at the same time in 1935.

Louisiana. R. C. Gaines (July 3): Conditions during the last 2 weeks at Tallulah, in Madison Parish (Delta section) have been unfavorable for the multiplication of boll weevils. First generation weevils have been emerging for a week or 10 days but, owing to unfavorable conditions, the infestation has not increased as expected. (July 24): In some fields cotton is fast reaching maturity. In field plots the infestation ranged from 5 to 32 percent, averaging 6 percent during the week.

C. O. Eddy (July): Boll weevil has increased its activities during the last half of the month, owing to rains.

Oklahoma. F. A. Fenton (July 20): Infestation continues to increase in the southeastern part of the State. In McCurtain County for the week ending July 17, the percentage of infestation in 11 fields sampled ranged from

3.4 to 25.8, with an average of 14.3 percent. In Choctaw County the infestation is serious in the bottoms, but in the uplands comparatively little damage will be caused.

Texas. K. P. Ewing (July 3): Infestation in Calhoun County increased during the week to an average of 23.12 percent, as compared to 10.7 percent the preceding week. In the Lavaca River bottom at Edna there was an average of 70.28 percent punctured squares. (July 24): Average infestation 70.49 percent. The maturity of the cotton combined with the high weevil infestation in all of this area, particularly in Calhoun and Jackson Counties, has caused the cotton to practically stop blooming in many fields. There was a noticeable migration into small cotton this week.

Prog. Rpt. Tex. Agr. Expt. Sta. (July 3): In general, boll weevils are causing far more damage in the coastal prairie section north of Corpus Christi than is realized. All cotton fields in the Lavaca River bottoms of Jackson County are being severely damaged where no control measures have been used. (July 10): The boll weevil infestation is increasing in southern and south-central Texas. (July 17): Average infestation records from eight counties in the State, ranging from Van Zandt and Smith in northern Texas to Dimmit and Calhoun in southern Texas, indicate that little damage is being caused in the northeast and the blackland areas of central Texas. The infestation reached a maximum of 40 percent on Brazos River bottom farms, and on upland farms the average increased from 35 to 42 percent during the last week, according to Bureau of Entomology and Plant Quarantine workers. (July 24): The boll weevil infestation in untreated fields of several counties averaged as follows: Calhoun, 28 percent; Jackson, 53 percent; Brazos, 40 percent; Burleson, 25 percent; Milan, 4 percent; Smith, 5 percent.

#### COTTON FLEA HOPPER (Psallus seriatus Reut.)

Georgia. P. M. Gilmer (June 26): Reports from Vienna, Unadilla, and Columbus, in the northern part of the State, indicate rather severe injury. At Tifton, in the southern part, the insect is present but has done no special damage. (July 17): The northern infestation seems to have declined sharply.

O. I. Snapp (July 1): The cotton flea hopper has damaged cotton near Fort Valley, in central Georgia.

Arkansas. D. Isely (July 24): There has been more injury by the cotton flea hopper this year than any year since 1926.

Oklahoma. F. A. Fenton (July 20): Damage to squares caused alarm in several widely scattered sections, notably in Sequoyah and Okfuskee Counties.

C. F. Stiles (July 22): Cotton flea hopper is occurring quite generally over the State but is decreasing in numbers.

Mississippi. C. Lyle (July 23): Was causing injury to cotton at Pope on June



29 and at Hernando on July 16. D. W. Grimes, of Durant, reports that damage is not so severe now as it was a few weeks ago.

E. W. Dunnam (July 24): In Washington County, in the east-central section, a few flea hoppers can be found but are causing very little damage.

Louisiana. La. Agr. Expt. Sta. Bug News (July 21): Abundant in the Red River Valley above Alexandria. New reports are now coming in on its activity below Alexandria and in the Lafayette and Breau Bridge districts.

R. C. Gaines (July 24): In the Delta section, in Madison Parish, a few flea hoppers have been taken in the sweepings made each week, but the numbers do not indicate much damage to cotton.

B. A. Osterberger and M. B. Christian (July): Cotton flea hopper seriously injuring cotton in several parishes, mostly along Red River from Natchitoches Parish to Avoyelles Parish.

Texas. K. P. Ewing (July 10): During the last 2 weeks there has been a marked decrease in the flea hopper infestation in Calhoun County. (July 24): In the young cotton flea hopper infestation continues sufficiently high to cause nearly all squares to be blasted.

R. W. Moreland (July 17): In Brazos and Burleson Counties the infestations have been very light in upland cotton fields. On July 10 some dusting was being done in the bottom fields.

Tex. Agr. Expt. Sta. Prog. Rpt. (July 17): Flea hoppers are in small numbers and causing practically no damage, except in northern and northwestern Texas. J. R. Quinby states that this insect is responsible for the loss of from three to five small squares each on 90 percent of the plants of May-planted cotton in Hardeman County. In Dickens County the average infestation in 11 fields is 100 flea hoppers to 100 buds, with a maximum of 222 flea hoppers. (July 24): Flea hoppers have decreased in northern Texas but have increased on young cotton in southern Texas. They are reported as causing damage in Donley, Wheeler, Dickens, and Hardeman Counties, northwestern Texas.

#### COTTON LEAF WORM (Alabama argillacea Hbn.)

Georgia. W. L. Lowry (July 22): On July 22 one half-grown larva was collected on Sea Island cotton in Lowndes County. On July 24 one larva two-thirds grown was found at Valdosta.

Florida. K. H. Smith and J. T. Roy (July 6): Pupae of the leaf worm were collected on Sea Island cotton today near Alachua and McIntosh. As these fields are some 45 miles distant, this indicates that the leaf worm may be scattered over the northeastern part of the State. (July 19): In a 40-acre field near Alachua leaf worms were found in sufficient numbers to be ragging the cotton in spots. As many as 25 worms were found on a

single plant, ranging from tiny threadlike worms a day or so old to pupae.

Florida. W. E. Conn (July 12): Light infestations in 2 acres of cultivated cotton at Miami and some larvae now entering into pupal stage.

Alabama. H. C. Young (July 13): At Florala, in the southern part of the State, larvae about half grown were found in one field.

Texas. J. C. Gaines (July 10): Leaf worms were found at College Station this week.

K. P. Ewing (July 24): The infestation in Calhoun County in the Gulf coast section is very spotted.

Tex. Agr. Expt. Sta. Prog. Rpt. (July 24): Leaf worms have been reported in west-central Texas. Their appearance near San Angelo, in Tom Green County, is from 2 to 3 weeks earlier than usual and may indicate an earlier invasion of northwestern Texas. Worms collected in south-central Texas have been found to be heavily parasitized for this time of year. (July 31): Have caused comparatively little injury to date. They were found last week in Reeves County. The recent hot, dry weather in central Texas tended to cause the newly matured moths to fly a greater distance, even though uninfested cotton is near.

Arizona. W. A. Stevenson (July 24): At Fresnal, Pima County, a very light infestation was discovered on July 23. The first infestation in 1936 was found on August 12.

BOLLWORM (Heliothis obsoleta F.)

Georgia. P. M. Gilmer and W. L. Lowry (July 24): From time to time a certain amount of damage has been observed in many fields of cotton, but thus far the damage is relatively small.

Mississippi. K. E. McCoy and J. E. Ragland (July 24): Slight damage has been noticed in several fields.

Louisiana. R. C. Gaines (July 9): At Tallulah a few bollworms were observed on cotton last week.

Texas. R. W. Moreland (July 17): At College Station cotton was found to have an average of 9.9 eggs per 100 terminals. At one point 84 eggs per 100 terminals were counted.

Tex. Agr. Expt. Sta. Prog. Rpt. (July 24): Eggs have increased in bottom-land fields and young worms are beginning to feed on the forms of succulent plants. No infestation has appeared in upland fields. An average of 15 eggs and a maximum of 84 per 100 plants has been found in 10 fields of the bottom lands in Brazos and Burleson County.

K. P. Ewing (July 24): Practically no bollworm damage was noticed at Edna or Port Lavaca.

COTTON APHID (Aphis gossypii Glov.)

South Carolina. F. F. Bondy (July 24): In Florence County one field that had been poisoned showed a heavy aphid infestation.

Georgia. T. L. Bissell (July 20): Aphids are numerous at Experiment on the growing points of cotton but do not seem to be harmful.

W. L. Lowry (July 24): With the advent of hot weather, cotton aphids seem to have disappeared almost entirely in Lowndes and Echols Counties.

Mississippi. G. L. Bond (July 23): Several fields of cotton at Moss Point heavily infested with the cotton aphid during the last 10 days.

E. W. Dunnam (July 24): Aphid population increasing in one field in Washington County.

Texas. K. P. Ewing (July 24): In Calhoun County aphids have caused practically no damage in any of the dusted cotton.

TARNISHED PLANT BUG (Lygus pratensis L.)

Tennessee. D. M. Simpson (July 8): In 1935 we practically had a crop failure, owing to damage from tarnished plant bugs. We have a heavy infestation of these insects again around Knoxville and a large percentage of the plants are practically devoid of squares. The insects are abundant in nearby fields of soybeans and lespedeza, also in weeds and grass. On a recent visit to western Tennessee several farms were visited in Fayette County near Somerville. On every farm damage similar to that at Knoxville was noted and tarnished plant bugs were found in the fields.

Louisiana. R. C. Gaines (July 24): Sweepings made in different cotton fields in Madison Parish during the last few weeks have shown only small numbers.

Oklahoma. F. A. Fenton (July 20): The tarnished plant bugs are injuring squares in several widely scattered sections of Oklahoma, notably in Sequoyah and Okfuskee Counties.

CONCHUELA (Chlorochroa ligata Say)

Texas. A. J. Chapman (July 17): Conchuelas are appearing in noticeable numbers in the fields at Presidio.

A CORN SILK BEETLE (Luperodes sp.)

Mississippi. Miss. Weekly Cotton Insect Rpt. (August 2): The most serious complaints of insect damage during the last week came from Noxubee County, where the corn silk beetle was reported causing severe injury to cotton squares and young bolls on many farms.



## FOREST AND SHADE-TREE INSECTS

GYPSY MOTH (Portheiria dispar L.)

Maine. J. V. Schaffner, Jr. (July 16): N. Trafton reports defoliation of hundreds of acres of woodland in Kennebec, Sagadahoc, and Lincoln Counties. The infestation is the heaviest on record for these three counties. Defoliation was spotty and local in the northern part of York, southern Oxford, Androscoggin, and Cumberland Counties.

Portland Press Herald (June 29): Officials of the State department of agriculture report the worst gypsy moth scourge ever to sweep southwestern and central Maine. Occurrence of the moths in devastating numbers is reported as far as Kennebec and Knox Counties, and in less serious intensity eastward along the coastal counties to Washington County.

Massachusetts. J. V. Schaffner, Jr. (July 6): Thousands of acres of woodland in the eastern part of the State are completely defoliated. The defoliation within 25 or 30 miles of Boston is more extensive than it has been for many years.

A. I. Bourne (July 23): The defoliation this year was much more general and widespread than in any recent year. There are beginning to be many centers of rather serious defoliation just west of the Connecticut River. Throughout central and eastern Massachusetts are similar large areas of very serious foliage strippings; however, in the Cape district, from Buzzard's Bay to Provincetown, conditions are apparently better than for several years.

Rhode Island. A. E. Stene (July 23): Probably the most outstanding note regarding insect prevalence during the past month is the increase in gypsy moth infestation. We have had large areas heavily infested with this insect in the past, but there were a greater number of places involved during the past season and the aggregate area where defoliation has taken place is quite large.

Pennsylvania. A. F. Burgess (July 17): The interest of a former W.P.A. worker resulted in the discovery of a larval infestation near the Coolbaugh-Paradise Township line in Monroe County. This man, now employed by the Delaware, Lackawanna, & Western Railroad Company, observed an egg cluster of the gypsy moth while working along the railroad right-of-way and reported to the field supervisor in charge of that district. Numerous larvae have since been discovered in a rather restricted area. Intensive treatments will be applied in an effort to eradicate the infestation.

BROWN-TAIL MOTH (Nygmia phaeorrhoea Donov.)

Maine. N. Trafton (July 26): Only a few larvae were seen this season and these were scattered through the towns of Bath, Hebron, Raymond,

Casco, Otisfield, and Paris.

SATIN MOTH (Stilpnotia salicis L.)

Maine. A. F. Burgess (June): Reports from the district inspector at Bangor in June indicated that defoliation was pronounced throughout his district. Shade and ornamental poplars showed the greatest injury.

N. Trafton (July 15): Severe local outbreaks in most of the towns in Androscoggin, Cumberland, Kennebec, Knox, Sagadahoc, Waldo, and York Counties, and also some in the southern parts of Franklin and Oxford Counties, and at Bangor, Brewer, Hemen, Oldtown, and Orono in Penobscot County.

New Hampshire. R. C. Brown (July 21): Abundant in the vicinity of Conway and Bartlett. Heavy feeding noticed on poplar shade trees.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

New England. A. F. Burgess (June): A very heavy infestation in New Hampshire was reported by the district inspector at Keene. Complete defoliation of oak, maple, and birch has been noted in several Vermont sections. Defoliation of sugar maple orchards is reported as weakening the trees and threatening next winter's maple sugar crop. Reports received from the supervisory personnel in Vermont indicate that much damage is being done in certain sections. Feeding is also noticeable in limited areas in sections of Massachusetts and northwestern Connecticut.

Maine. N. Trafton (July 15): Many acres of woodland were severely defoliated in Cumberland, Oxford, and York Counties.

Vermont. J. V. Schaffner, Jr. (July 23): In Addison, Bennington, Orange, Rutland, Windham, and Windsor Counties infestation was heavy. Thousands of acres of maple sugar orchards and mixed hardwood forests were from 50 to 75 percent defoliated. The humid weather in the spring favored epidemics of disease and large numbers of the caterpillars while in the fifth and sixth instars succumbed to "wilt", thus reducing the infestation so that few trees were completely defoliated.

H. N. Bean (June 23): In Randolph, Royalton, and vicinities small areas of maple and birch were defoliated. Large areas of defoliation in town.

Minnesota. F. W. Forbes (June 20): Tent caterpillars reported very abundant at Bemidji, Beltrami County. (June 21): Tentless caterpillars reported moderately abundant at some points near the shore in Rosebush, Colvill, and Hovland Townships, as observed by county agent. Reported by State forest officers as very abundant at points on Gunflint Trail, inland. (July 12): Very abundant at McIntosh, Polk County, and in

some limited areas stripping the trees. (July 15): W. Kortcsnaki reports the caterpillars very abundant in St. Louis County at Embarrass. Complete defoliation in some areas.

#### CANKERWORMS (Geometridae)

New England. B.E.P.Q. News Letter (August): Examination of defoliated areas at the lower reaches of Penobscot River basin in Maine show 90 percent defoliation by cankerworms. Feeding is noticeable in limited areas in sections of Massachusetts and northwestern Connecticut.

Maine. N. Trafton (July 26): Prevalent at this season. Many shade trees and apple orchards, also hundreds of acres of woodland were defoliated this spring in the towns of Kennebunkport, Kennebunk, York, Wells, Biddeford, Saco, Old Orchard, Scarborough, Cape Elizabeth, Portland, South Portland, Westbrook, Falmouth, Cumberland, Yarmouth, Freeport, Brunswick, Bath, Woolwich, Boothbay, and Bristol. Also one heavy infestation noted in Oldtown.

Nebraska. M. H. Swenk (July 22): One of the most injurious outbreaks of the spring cankerworm (Paleacrita vernata Peck) in the history of the State occurred between May 21 and June 23 and involved all of southeastern Nebraska north to Douglas, Platte, Boone, and Custer Counties and west to Dawson and Harland Counties, with separate isolated local outbreaks in McPherson and Boyd Counties. Elm trees were the most severely attacked, including both American and Chinese elm. Apple trees were next most seriously attacked, and there were a few reports of damage to hackberry foliage.

#### MOURNING-CLOAK BUTTERFLY (Hamadryas antiopa L.)

Minnesota. R. C. Stephens (July 13): Strips Chinese elm and seems to die after weaving a web around the stems.

South Dakota: H. C. Severin (July 23): Caterpillars of the mourning-cloak butterfly are more abundant than usual; working chiefly on shade trees.

#### WHITE-MARKED TUSsock MoTH (Hemerocampa leucostigma S. & A.)

Ohio. E. W. Mendenhall (July 28): Quite serious on the elms and maples along the streets in Zanesville.

#### FALL WEBWORM (Hyphantria cunea Drury)

Maryland. E. N. Cory (July 9): General and numerous on poplar at Baltimore.

Alabama. J. M. Robinson (June 21): Active on pecans in southeastern Alabama.

Mississippi. C. Lyle (July 23): Reported fairly abundant in the Jackson, Poplarville, and Moss Point districts.



BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Connecticut. E. P. Felt (July 23): Locally abundant at Stamford. A distinctly unusual condition for this area.

New York. E. P. Felt (July 23): Frequently reported about New York City.

Delaware. L. A. Stearns (July 23): Much more abundant than usual, frequent complaints being received from over the entire State. Attacking evergreens.

Maryland. E. N. Cory (July 26): Usual number of reports of evergreen bagworm.

Virginia. C. R. Willey (July): This pest occurring quite generally this season.

A. M. Woodside (July 21): Appears to be something like a general outbreak of bagworms on ornamental evergreens in vicinity of Staunton.

North Carolina. B. H. Wilford (July 30): Reported from Asheville. While the majority of cases were reported as damaging arborvitae, several other evergreen ornamentals were concerned. A number of individual trees have been completely defoliated.

South Carolina. W. J. Reid, Jr. (July 31): Specimens of the bagworm and injured branches of arborvitae received from Fort Moultrie. The damage to this ornamental on the reservation was reported to be severe.

Georgia. T. L. Bissell (July 5): Numerous and destructive on arborvitae and deodar cedar at Experiment. Worms apparently one-third grown.

C. H. Alden (July 15): Very injurious on several plantings of arborvitae at Cornelia.

Ohio. E. W. Mendenhall (July 28): Serious on elm trees in Zanesville and Springfield, especially on elms and maple trees planted along the streets.

Kentucky. M. L. Didlake (July 24): Unusually abundant on evergreens. Complaints from Lexington, Midway, Brownsville, Hodgenville, Vine Grove, Campbellsville, Mount Vernon, and Eubank.

Tennessee. G. M. Bentley (July 21): Reported in several places in the State on arborvitae and cedar.

L. B. Scott (July 16): More numerous than usual in northwestern Tennessee. Many reports of severe damage have been received from Montgomery County. Many ornamental cedars have been killed or seriously damaged.

B. H. Wilford (July 30): A light infestation by the bagworm on the red cedars on the Lebanon cedar forest near Lebanon was apparent early in July.

Alabama. J. M. Robinson (July 13): Reported as attacking evergreen at Birmingham.

Mississippi. C. Lyle (July 23): Reported abundant over most of the State during July.

#### ASH

##### A SPHINGID (Sphinx kalmiae A. & S.)

North Dakota. F. G. Butcher (July 19): Practically 100 percent foliage destruction to ash groves in the vicinity of Bismarck has been caused by larvae, probably S. kalmiae. These larvae are also being reported from other sections of the State where they are abundant feeding on corn and in vegetable gardens.

#### BIRCH

##### BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

New York. R. E. Horsey (July): Larvae were noted as early as July 2 and have become very numerous. The damage on several large planted river birches in Rochester is more severe and noticeable than I remember in previous years.

#### CATALPA

##### CATALPA SPHINX (Ceratomia catalpae Bdv.)

New Jersey. E. Kostal (July 12): Unsprayed trees in Morganville, Monmouth County, defoliated.

Ohio. E. W. Mendenhall (July 1): Infesting catalpa trees in Westerville. (July 14): Quite injurious in Rome.

Indiana. P. Luginbill (July 6): A number of catalpa trees near Lafayette have been defoliated. The larvae are now mature and leaving trees for pupation.

J. J. Davis (July 16): The catalpa worm is reported defoliating trees at Winamac.

Kentucky. M. L. Didlake (July 24): Catalpa sphinx abundant in various localities.

ELM

WOOLLY ELM APHID (Eriosoma americanum Riley)

Nebraska. M. H. Swenk (July 22): Next to the spring cankerworm in seriousness on the elm trees, if not equally so, was an outbreak of the woolly elm leaf aphid that began about May 27 and continued until June 28. This outbreak covered most of the State, from the southeastern corner north and west to Cedar, Holt, Dawes, Thomas, Perkins, and Redwillow Counties. Owing to the two pests, the elm trees in Nebraska suffered heavy damage to their foliage.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

New York. R. E. Horsey (July): Several noted the first part of July on American and European elms in Rochester.

Maryland. E. N. Cory (July 27): General on elm. Numerous reports. Seems to be on the increase.

Ohio. E. W. Mendenhall (July 25): Very injurious on the elm trees in Columbus.

Utah. G. F. Knowlton (July 1): Injury in Salt Lake City and at Provo.

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Vermont. J. V. Schaffner, Jr. (July 23): In the residential sections of Brandon and Middlebury the elm leaf beetles are abundant. The foliage on many large elms is brown from the feeding.

H. L. Bailey (July 26): Very abundant at Winooski, Chittenden County, in northwestern Vermont. Many elms nearly defoliated. First record of such serious damage by beetle north of Middlebury, Addison County, from which town, south to Massachusetts line, the beetle is irregularly abundant.

Connecticut. W. E. Britton (July 23): Injured trees are now conspicuous by their brown foliage, and have been observed in New Milford, Sharon, Cornwall, Danbury, Torrington, East Hartford, Gastonbury, and New Haven. Larvae, pupae, and adults have been received from Windsor Locks, and larvae from Manchester.

New York. R. E. Horsey (July): Grubs 1/4 inch long were noted on June 26 and were about through feeding by July 18. Very numerous and destructive this year on American, English, and Huntingdon elms.

E. P. Felt (July 23): Work is manifest in Hudson Valley.

Virginia. A. M. Woodside (July 21): Becoming injurious at Staunton.

C. R. Willey (July): About as usual in Richmond and south-side Virginia. Many trees are now defoliated, practically all larvae matured, and some adults out.



Ohio. E. W. Mendenhall (July 13): Very bad on elm trees in Springfield and Columbus. Trees are being defoliated. (July 26): Getting worse in Columbus, new sections being defoliated.

Kentucky. M. L. Didlake (July 24): Doing conspicuous damage to trees about Lexington.

Idaho. R. W. Haeghele (July 26): Emerged much later than usual with infestations scattered and much lighter than for several years.

California. S. Lockwood (July 2): In Sacramento County most of the larvae have left the foliage and are now in the pupa stage at the base of the trees, with a freshly emerged adult being found occasionally.

### HICKORY

#### HICKORY PHYLLOXERA (Phylloxera caryaecaulis Fitch)

New York. R. E. Horsey (July): Damage during the end of June and early July noted by the dropping of a large number of leaves from large hickory trees at Rochester. The black galls are very noticeable and numerous on the trees.

### LOCUST

#### CARPENTER WORM (Prionoxystus robiniae Peck)

Maryland. E. N. Cory (July 7): Attacking locust at Solomons Island.

#### LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

North Carolina and Tennessee. B. H. Wilford (July 30): The black locusts in the forested area of Madison, Yancey, Buncombe, and Henderson Counties in North Carolina and in the Greenbrier section of the Great Smoky Mountains National Park in Tennessee appear as though severely fire scorched. Damage is more pronounced than in 1935 and 1936.

#### LOCUST BORER (Cyrtene robiniae Forst.)

Kansas. H. R. Bryson (July 19): Causing injury to old locust trees at Lyndon.

### MAPLE

#### COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Indiana. J. J. Davis (July 26): Continues to be reported as abundant, in the northern third of the State. The first hatching of eggs observed on specimens sent from Shipshewana on June 26 and received at Lafayette on June 28. The eggs were hatching when received.

Illinois. W. P. Flint (July 21): Very abundant throughout the northern fourth of the State. More complaints of infestation have been received than at any time for the past several years.

OBLONG LEAF WEEVIL (Phyllobius oblongus L.)

Ohio. A. C. Davis (June 2): Feeding in the adult stage on the leaves of young willow, maple, and cottonwood in a nursery near Chardon, Geauga County. Average about 25 per tree. Damage was extensive, especially on young shoots. (Det. L. L. Buchanan.)

A EUCOSMID (Proteoteras aesculana Riley)

Michigan. E. I. McDaniel (July 2): A number of tender new twigs of maple and boxelder have been attacked by this small green worm that works down in the tender new growth. The species is unusually abundant this year.

Montana. H. B. Mills (July 22): A little terminal borer caused some injury to soft maple trees in Billings early in July.

GREEN-STRIPED MAPLE WORM (Anisota rubicunda F.)

Missouri. G. D. Jones (July 24): Heavy infestation. Stripping soft maples at Springfield, southwestern Missouri.

OAK

GOLDEN OAK SCALE (Asterolecanium variolosum Ratz.)

Rhode Island. E. P. Felt (July 23): Somewhat abundant on English oaks at Bristol and probably a major cause for the numerous dying twigs and branches.

A LEAF MINER (Neurobathra strigifinitella Clem.)

Maryland. R. A. St. George (July 12): A leaf-miner injury on oak specimens from State Forest Nursery, College Park. (Det. C. Heinrich.)

A CYNIPID (Neuroterus minutus Bass.)

Massachusetts. E. P. Felt (July 23): The minute oak blister galls were so abundant on an oak in the Boston area as to seriously affect much of the foliage on the tree.

PINE

PINE NEEDLE SCALE (Chionaspis pinifoliae Fitch)

Mississippi. C. Lyle (July 23): The pine leaf scale was found at Durant.

Utah. G. F. Knowlton (July 1): Injury common at Logan and Salt Lake on pine and spruce.

BLACK TURPENTINE BEETLE (Dendroctonus terebrans Oliv.)

Mississippi. C. Lyle (July 23): Collected from pine on July 14.

SPRUCE BUDWORM (Cacoecia funiferana Glen.)

Michigan. E. I. McDaniel (July 19): An extensive area of jack pines has been defoliated in the vicinity of Negaunee. This area covers several thousand acres.

Minnesota. A. G. Ruggles (July 19): Spruce budworm is moderately abundant.

Colorado. J. A. Beal (June): A heavy infestation is occurring on ponderosa pine near Sugarloaf. An examination of the infested area showed the larvae to be very abundant over at least a section of forested land. On June 25 the larvae were tiny but had spun webs on nearly all the pine buds in the area examined. In some instances two or three larvae occupy a single bud. They are feeding on the needles and boring into them at the bases. This budworm probably represents a different strain than the one found infesting Douglas fir on other parts of the Roosevelt Forest. No sizable areas of infestation have previously occurred in pure stands of ponderosa pine. The present one threatens to become serious.

RED-HEADED PINE SAWFLY (Neodiprion lecontei Fitch)

Michigan. J. K. Kroeber (July 24): Sawfly larvae on jack and red pines now more numerous than ever noticed before. About half grown. Will probably result in killing one or more plantations on the Mackinac State Forest.

A SCARABID (Pachystethus obliqua Horn)

Michigan. L. E. Yeager (June): An outbreak of the pine chafer beetle, which has caused considerable alarm by its defoliation of jack pine on the Manistee National Forest in Michigan, is much less severe this year. This outbreak has been in progress since 1934 and, so far as known, this is the first period when the insect has occurred in destructive numbers. The beetles eat into the sides of the needles near the base, cut off some needles, and cause others to die. This gives the affected trees the appearance of having been scorched. Only the needles on the current season's growth are eaten but, after 2 or 3 years of attack, the trees begin to die in the tops, causing stag-head. Feeding tests with larvae do not indicate that the larvae feed to any extent on the roots of trees.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

New England and New York. E. P. Felt (July 23): Has been somewhat injurious to leaders of white pine and also in spruce tips in southern New England and southeastern New York.



Connecticut. R. B. Friend (July 23): Much more abundant than last year at Windsor.

PINE BARK APHID (Pineus strobi Htg.)

New York. R. E. Horsey (July): Numerous and conspicuous on white pine the first part of the month at Rochester.

POPLAR

COTTONWOOD BORER (Plectrodera scalator F.)

Kansas. H. R. Bryson (July 27): Reported causing injury to trees at Leavenworth. Also plentiful on young cottonwoods along the Kaw River at Manhattan.

EUROPEAN SPRUCE SAWFLY (Diprion polytomum Htg.)

Vermont. H. L. Bailey (July 26): Larvae feeding on spruce at Wilmington, Windham County, south-central Vermont on June 30. Many trees dead from previous attacks, chiefly on margins of stands.

WALNUT

WALNUT CATERPILLAR (Datana integririma G. & R.)

Virginia. W. J. Schoene (July 21): Several colonies have been seen on walnuts. The caterpillars are more numerous than I have previously seen.

WILLOW

EUROPEAN WILLOW LEAF BEETLE (Plagiodera versicolora Laich.)

New York. E. P. Felt (July 23): Generally abundant and injurious in southwestern New England and southeastern New York.

Connecticut. M. P. Zappe (July 22): Very many more than last year, especially along streams, in Fairfield County.

POPLAR AND WILLOW BORER (Cryptorhynchus lapathi L.)

Maryland. E. N. Cory (July 12): Attacking pussy willow at Cumberland.

INSECTS AFFECTING GREENHOUSE  
AND ORNAMENTAL PLANTS

A SCARABAEID (Ataenius cognatus Lec.)

Massachusetts. A. I. Bourne (July 23): W. D. Whitcomb, of Waltham, reported rather heavy infestations in several large golf courses in eastern Massachusetts. This small scarab has destroyed several thousand square feet of turf on two large golf courses in Newton by eating the roots from the grass. Injured turf can be rolled back as when infested with the grubs of the Japanese beetle. Larvae, pupae, and, adults were present on July 14, pupae predominating.

HAIRY CHINCH BUG (Blissus hirtus Montd.)

Connecticut. W. E. Britton (July 23): Specimens received with reports of injury to lawns from Fanbury, New Haven, and West Haven.

New England and New York. E. P. Felt (July 23): The hairy chinch bug is locally abundant and quite injurious to lawns and golf courses in southwestern New England and southeastern New York.

PEAR SLUG (Eriocampoides limacina Retz.)

New York. R. E. Horsey (July 6): Numerous on Mazzard cherry and cotton-easter at Rochester.

SOUTHERN PINE SAWYER (Monochamus titillator F.)

Virginia. C. R. Willey (July 23): On June 15 I collected an adult that was feeding on Chinese arborvitae in Fredericksburg. On June 21 a nurseryman from Petersburg brought in a specimen of hemlock damaged by the feeding of adults. He reported much damage being done in a newly developed section where many hemlocks were used in ornamental plantings. This pest has at times been numerous in Richmond, Newport News, and Norfolk. We have had no complaints except from Petersburg this year.

CHRYSANTHEMUM

CHRYSANTHEMUM LEAF MINER (Phytomyza chrysanthemi Kowarz)

Mississippi. C. Lyle (July 23): The chrysanthemum leaf miner was injuring verbenas at Meridian on June 28.

DAHLIA

STALK BORER (Papaipema nebris nitela Guen.)

Ohio. E. W. Mendenhall. (Aug. 3): Stalk borers are injurious in dahlia plantations in Springfield.

A FLEA BEETLE (Systema elongata F.)

Georgia. T. L. Bissell (July 13): Feeding on surface of dahlia leaves at Experiment.

DELPHINIUM

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Connecticut. W. E. Britton (July 23): Generally troublesome. Specimens received for identification, taken on larkspur from Riverside, Salisbury, and Woodbury.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Const.)

New York. R. E. Horsey (July): Euonymus at Rochester found to be badly infested. Some branches were white with the male scale. Moving young was found on July 20 and 21.

Maryland. E. N. Cory (July 2): Euonymus scale reported on bittersweet at Churchville, Harford County.

Mississippi. C. Lyle (July 23): The euonymus scale was observed in great numbers in several counties in northwestern Mississippi during the last few weeks.

GLADIOLUS

GLADIOLUS THRIPS (Taeniothrips simplex Morison)

Mississippi. M. L. Grimes (July 23): Thrips on several plantings of gladioli at Meridian.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

Ohio. E. W. Mendenhall (August 4): Injurious on gladioli in plantations at New Carlisle.

IVY

IVY SCALE (Aspidiotus hederæ Vallot)

Ohio. E. W. Mendenhall (July 15): The ivy or oleander scale is quite bad on English ivy in some of the greenhouses in Springfield.

MEALY FLATA (Ormenis pruinosa Say)

New York. E. P. Felt (July 23): The mealy flata, or lightning leafhopper, was found in numbers on wistaria and English ivy at Cold Spring Harbor.



JUNIPER

AN APHID (Cinara sibericae Gill. & Palm.)

Virginia. R. A. St. George (July 7): On May 7 J. T. Palmer, of Arlington, submitted a specimen of tall juniper which was heavily infested with aphids. (Det. by P. W. Mason.)

JUNIPER SCALE (Diaspis carueli Targ.)

Connecticut. E. P. Felt (July 23): The juniper scale was reported to be abundant at Lakeville.

LILAC

LILAC LEAF MINER (Gracilaria syringella F.)

Vermont. H. L. Bailey (July 15): Lilac leaf miners unusually abundant at Montpelier, Washington County, central Vermont. Many leaves mined and curled up.

OYSTERSHELL SCALE (Lepidosaphes ulmi L.)

New York. R. E. Horsey (July): Numerous on lilacs at Rochester. A 45-year-old shrub of the Amur lilac, 12 feet in height and spread, was found to have the twigs and branches completely covered with old and newly set scale, the worst infestation I have ever seen. About a third of the branches were dead. A tree lilac standing beside the infested one and almost touching it was free of scale. I have noted before lilacs free of scale next to badly infested ones.

LILAC BORER (Podosesia syringae Harr.)

New York. R. E. Horsey (July): The characteristic sawdust from this borer was noted at a few lilacs lately and a request for control information was received on July 16 from a Rochester resident, who said his lilacs had been badly damaged.

OLEANDER

OLEANDER CATERPILLAR (Syntomeida epialis Walk.)

Florida. J. R. Watson (July 23): The oleander caterpillar, exterminated by the freeze of December 12, 1934, has again appeared at Gainesville.

PHLOX

PHLOX PLANT BUG (Lopidea davisii Knight)

Indiana. J. J. Davis (July 17): Phlox plant bug is abundant and destructive to phlox at Rockport. All specimens received were nymphs.

RHODODENDRON

RHODODENDRON LACEBUG (Stephanitis rhododendri Horv.)

New York. R. E. Horsey (July 1): Winged adults quite numerous on rhododendron in Rochester.

ROSE

ROSE MIDGE (Dasyneura rodophaga Coq.)

Indiana. J. J. Davis (July 26): Rose midge was becoming very abundant and destructive in a greenhouse at Portland on June 23. A report from Indianapolis, dated July 14, advises us that this insect is becoming prevalent and destructive in rose gardens out of doors. This is the first report we have ever received of injury to out-door roses.

A ROSE STEM GIRDLER (Agrilus communis rubicola Perrin)

Michigan. E. I. McDaniel (July 13): The imported rose stem girdler has been found in a rose garden at Lansing. It has destroyed practically all rugosa roses and has become established on the hybrid species.

ROSE CURCULIO (Rhynchites bicolor F.)

Utah. G. F. Knowlton (June 30): Rose snout beetles are damaging roses at Holladay, Brigham, Salt Lake City, and Logan and are abundant on wild roses at Sardine, Canyon, Brigham Canyon, and Mill Creek.

INSECTS. ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

AMERICAN DOG TICK (Dermacentor variabilis Say)

Massachusetts. F. C. Bishopp (July 24): The American dog tick appeared to be declining rapidly in numbers on Cape Cod and Martha's Vineyard during the last 10 days.

Connecticut. W. E. Britton (July 23): Received one adult from Stratford.

CHIGGER (Trombicula irritans Riley)

Ohio. N. F. Howard (July 5-10): Chiggers are very abundant in the vicinity of Columbus, even present on city lawns.

Illinois. C. L. Metcalf (July 7): We are getting reports of an unusual abundance of chiggers from central Illinois.

Kentucky. M. L. Didlake (July 24): Chiggers in lawns at Morganfield and New Haven.

Missouri. L. Haseman (July 24): Some sections of the State reporting unusual annoyance from chiggers.

Tennessee. G. M. Bentley (July 21): The American chigger is unusually prevalent.

MOSQUITOES (Culicinae)

Delaware. G. H. Bradley (July 28): No outbreaks of consequence of the salt marsh mosquitoes Aedes salinarius Coq. and A. sollicitans Walk. have occurred along the Delaware and Maryland coasts up to July 25.

Maryland. E. N. Cory (July 20): Culex territans Walk. was sent in from Westover.

Missouri. L. Haseman (July 24): Throughout central Missouri during the month common mosquitoes have been very annoying, even in mid-day, in woods and shaded places.

Utah. G. F. Knowlton (July 5): Mosquitoes severely annoying to campers and picnickers in Logan Canyon.

A REDUVIID (Triatoma protracta Uh1.)

Colorado. R. G. Richmond (July 20): A few persons have reported attacks by this insect in Denver, resulting in slight fever, irritation, and some edema.



PUSS CATERPILLAR (Megalopyge opercularis S. & A.)

Louisiana. T. E. Snyder (July 9): Noted in New Orleans on roses and choke-cherry, and injuring humans.

EAR TICK (Ornithodoros megnini Duges)

Tennessee. G. M. Bentley (July 21): The spinose ear tick has been reported at one residence in Knoxville, owing to a badly infested dog. The ticks are occurring in the cracks of the walls and in and around the loose joints of shelving in cabinets.

CATTLE

SCREWORM (Cochliomyia americana C. & P.)

South and Southeast. W. E. Dove (July 30): For the 4-week period ended July 16, various counties in Georgia reported 327 cases as follows: Appling 2, Atkinson 1, Bacon 1, Brantley 3, Bulloch 5, Camden 4, Charlton 40, Chatham 2, Clinch 9, Coffee 3, Echols 2, Effingham 10, Glynn 6, Jeff Davis 2, Long 54, Lowndes 2, McIntosh 66, Mitchell 6, Pierce 2, Screven 2, Tattnall 2, Thomas 13, Ware 56, and Wayne 34. Almost half of all infestations continue to occur in the navels of late calves. In Florida for the 4-week period ended July 16, supervisors reported 2,669 infestations among 264,925 animals. In Louisiana specimens were identified from Leesville and reports of a few cases were received from Beauregard and Vernon Parishes.

Kansas. W. E. Dove (July 30): In Kansas a few cases were reported from Osage, Chase, Pottawatomie, and Chautauqua Counties.

Oklahoma. C. F. Stiles (July 22): Screwworms are showing up in large numbers. Jefferson County reports them as bad as in 1935. Two calves have been lost in Stephens County. Osage County reports serious outbreak. One case is also reported from Garfield County.

Texas. W. E. Dove (July 30): Stockmen in 73 counties reported on questionnaires for the month ended July 15 that 11,058 infestations occurred among 290,582 animals. In the principal sheep- and goat-breeding area reports from 26 counties gave 3,574 infestations among 152,800 animals. In the lower counties of the State 1,623 cases were reported among 25,004 animals. Supervisors reported 4,325 cases among 792,293 animals for the 4-week period ended July 16. Supervisors reconnoitered in 18 of these southern counties during the week ended July 23 and reported 2,440 infestations among 393,908 animals. Some counties in the Panhandle show tendencies toward localized outbreaks and a few cases are reported from counties in eastern Texas.

D. C. Parman (July 28): Catches from traps in the lower Rio Grande Valley from Catarina to Hebbronville and south, indicate C. americana present in about the same numbers as during the winter months. From this area north to Edwards escarpment adults built up until the first of

June. Since then there has been a gradual decrease over this area. The build-up at present in the traps is indicated from Fort Davis to Ozona, and is about 50 percent more than it was in the Gulf Plains area. The traps east of San Antonio do not indicate any considerable build-up to the first of July, but migration has been indicated to western Louisiana, where larvae were taken the first of July. Over the entire State infestations of C. americana have been practically normal. The northern limit in Texas and Oklahoma at present appears to be about the central Panhandle in Texas and the central and southern parts of Oklahoma. The migration north was not quite so rapid during June and July as it was last year.

New Mexico. W. E. Dove (July 30): In New Mexico 607 cases were reported among 143,156 animals.

Arizona. D. C. Parman (July 28): Records indicate that C. americana has completed migration across the southern desert area and is established on the escarpments at Wickenburg. To the present the build-up has not been very considerable at any point but the areas in southeastern Arizona, about Nogales, Fairbanks, and Douglass, indicate appreciable build-up, being 10 percent as high as the infestation in west-central Texas.

W. E. Dove (July 30): From 17,329 animals, 33 infestations were reported.

#### STABLEFLY (Stomoxys calcitrans L.)

Maryland. G. H. Bradley (July 28): Stableflies were quite troublesome in the vicinity of Ocean City in the early part of July.

Iowa. F. C. Bishopp (July 6): In traveling across Iowa and eastern Nebraska I found much evidence of stablefly attack on livestock. Cattle and horses were observed bunched together and fighting vigorously.

Missouri. L. Haseman (July 24): Stableflies very abundant during the month.

#### HORN FLY (Haematobia irritans L.)

Missouri. L. Haseman (July 24): Horn flies very abundant during the month.

Colorado. F. C. Bishopp (June 30): Horn flies are relatively scarce at Colorado Springs. On several herds observed there were about 30 to 50 flies per animal.

#### HORSES

##### BOTFLIES (Gastrophilus spp.)

Colorado. F. C. Bishopp (July 4): Three horses were examined at Virginia Dale for eggs. Each showed a very light infestation of G. nasalis L. No adult activity was observed. The horses were entirely free of G. intestinalis Deg. On July 3 several horses along the highway 4 miles

north, near the Wyoming line, were being greatly annoyed by G. haemorrhoidalis L. Some ranchmen in this vicinity report not having observed any attacks this year, which indicates that adult activity has started only recently.

## HOUSEHOLD AND STORED-PRODUCTS INSECTS

### TERMITES (Rectulitermes sp.)

Kentucky. M. L. Didlake (July 24): Complaints from Nicholasville, Harrodsburg, and Bethlehem.

Kansas. H. R. Bryson (July 22): Besides the usual number of requests regarding the control of termites in houses, some correspondents have reported termite injury to living shade trees. This condition no doubt has been brought about by exceptionally dry soil conditions and, as a result, the termites have been attracted to watered trees or living trees.

### ARGENTINE ANT (Iridomyrmex humilis Mayr)

Alabama. J. M. Robinson (July 21): The Argentine ant is active in many parts of the State.

Mississippi. C. Lyle (July 23): Argentine ants received from a correspondent at Quentin on July 8.

### A LEAF-CUTTING ANT (Atta texana Buckl.)

Louisiana. T. E. Snyder (August 4): At De Ridder, in Beauregard Parish, this ant was found attacking lettuce and peas and carrying grain from storehouses. Ordinarily it is a serious pest in pine plantations in winter and spring.

### RED HARVESTER ANT (Pogonomyrmex barbatus F. Smith)

Oklahoma. F. A. Fenton (July 20): The red harvester ant was the subject of inquiries from Thomas and Leon.

### HOUSE CRICKET (Gryllus domesticus L.)

Connecticut. W. E. Britton (July): Several dwelling houses in Hartford infested. They are near a dump, which may be the source of infestation.

### A FLOWER BEETLE (Tribolium madens Charpentier)

Minnesota. H. H. Shepard (July 15): One specimen was found in a sample of wood shavings used as insulation in the walls of a house at Montevideo.

### A HAIRY FUNGUS BEETLE (Typhaea fumata L.)

Massachusetts. A. I. Bourne (July 23): On June 4 a barn at Groton was found to be heavily infested with this beetle. The infestation apparently started in molded hay. When infestation was discovered and the hay was removed, millions of beetles swarmed over the building.